# AMERICAN BEE JOURNAL



December 1944

# Bee Books *as*
# Christmas Gifts

A home bee library is not only for the father, husband, brother, but also for the friends who visit your home. The special book, the general one, for the layman, for the beekeeper. We have a full line.

Please all members of the family by making your selections from those listed below. ALL PRICES POSTPAID.

**HONEY GETTING** by E. L. Sechrist, formerly of the U. S. D. A., as beekeeping specialist; also a commercial beekeeper operating in the United States, and in the tropics; analyst on beekeeping costs for the United States Government. Something brand new in bee books, entirely devoted to elaborating the principles behind getting a maximum crop at a minimum of expense. Limited edition at low price. **$1.50.**

**A LIVING FROM BEES** by Frank C. Pellett. Combining the results of many years experience, with the latest developments and improvements in beekeepng. As the title suggests, this book is designed to explain how a living can be made from bees. 300 pages. **$2.00.**

**BIRDS OF THE WILD** by Frank C. Pellett. A book of absorbing interest to the bird lover who wishes to attract his feathered friends to his home garden. **$1.00.**

**FIRST LESSONS IN BEEKEEPING** by C. P. Dadant, (revised by M. G. and J. C. Dadant). A reliable guide to things you must know first about bees, hives, producing honey, etc. Suggests management for a few colonies, the small apiary. **$1.00.**

**SCIENTIFIC QUEEN-REARING** by G. M. Doolittle. The complete queen-rearing methods of the man who gave us artificial cells, etc. 126 pages. Paper. 50 cents.

**DADANT SYSTEM OF BEEKEEPING** by C. P. Dadant. Methods of using the large hive. A system of beekeeping which proved a success through three generations of beekeepers. Available also in French, Spanish and Italian. 120 pages. Cloth. $1.00.

**BEEKEEPING** by E. F. Phillips. A comprehensive study of beekeeping theory and practice. The author is professor of apiculture at Cornell University. $4.00.

**HUBER'S OBSERVATIONS ON BEES** translated from the French by C. P. Dadant. Classic observations of the great Swiss naturalist. The best English translation, and the only one now in print. 230 pages. Cloth. $3.00.

**OUTAPIARIES** by M. G. Dadant. An outline of the equipment, location and management necessary in operating an outyard system. 125 pages. Cloth. $1.00.

**FLOWERS OF THE WILD** by Frank C. Pellett. How to transplant wild flowers and grow them successfully in the garden. Illustrated with photographs by the author. $1.00.

**THE LIFE OF LANGSTROTH** by Florence Naile. This is the life history of L. L. Langstroth, America's master of bee culture, and is a book every beekeeper should have in his library. Cloth bound, 215 pages, price $2.00.

**BEE VENOM THERAPY** by Bodog F. Beck. A doctor's findings in his use of bee venom in the treatment of rheumatism. 230 pages. Cloth. $5.00.

**LIFE OF THE BEE** by Maurice Maeterlinck. One of the bee classics. A poetic treatment of the behavior of the bee colony. $2.50.

**BEE HUNTING** by John R. Lockard. How to make apparatus for finding bee trees in the woods. 50 cents.

**THE GOLDEN THRONG** by Edwin Way Teale. A popular presentation of the life of the bee colony, by the author of "Grassroot Jungles," with excellent photographs, $3.50.

**HISTORY OF AMERICAN BEEKEEPING** by Frank C. Pellett. The fascinating story of the beginning and growth of America's honey industry. 213 pages. Cloth. $2.50.

**PRODUCTIVE BEEKEEPING** by Frank C. Pellett. One of the standard works on beekeeping, by the author of "American Honey Plants," "Birds of the Wild," and other books. $3.50.

**ANATOMY AND PHYSIOLOGY OF THE HONEYBEE** by R. E. Snodgrass. The authoritative text on the subject. $3.50.

**BEEKEEPING IN THE SOUTH** by Kenneth Hawkins. A special study of southern beekeeping. $1.00.

SEND YOUR ORDERS TO

## American Bee Journal : Hamilton, Illinois

By
Ed Reed
*Register & Tribune Syndicate*


They'll all be singing if we buy more War Bonds to speed victory.

# AMERICAN BEE JOURNAL

December, 1944 Hamilton, Ill. Vol. LXXXIV, No. 12

**Editors: G. H. Cale, Frank C. Pellett, M. G. Dadant, J. C. Dadant**

Published monthly at Hamilton, Illinois. Entered as second class matter at the Postoffice, at Hamilton, Illinois. In United States, Canada and Mexico, $1.00 a year; two years $1.50; three years $2.00; Foreign $1.25 a year; two years $2.00; three years $2.75. Subscription stopped at expiration printed on wrapper.

# Why You Deserve a *Merry Christmas*

The past two years have been trying times for honey producers yet we do not recall having received a single letter criticizing us for not handling orders "as usual". This certainly sets a record of some kind and proves that all honey producers are understanding people.

The necessary War Production Board regulations have made it impossible for us to supply many folks with what they ordered and many shipments were late. Authority to purchase materials did not guarantee they could be purchased and too often they could not. However "our boys" overseas might have had to go without if all the materials had been given to us and to you.

What has surprised and pleased us all is that while most honey producers necessarily do not have a knowledge of manufacturing and its war time problems, none of you have "taken it out" on us when you could not get shipments. This has helped to lighten our burdens and we want to express our appreciation.

We now have 63 employes in the U. S. armed services. We send each of them a letter each month telling where the others are and how they are coming. They are eager to know how the honey crop is and how you producers are getting along under war time restrictions. This interest, we feel, is a ***Merry Christmas,*** from all of us to all of you.

## G. B. LEWIS COMPANY

*Makers of* BEEWARE

WATERTOWN, WISCONSIN

## WHAT DO YOU THINK?

Years ago, the Beekeepers' Review, under Hutchinson, each month, proposed for discussion some interesting question, usually about beekeeping practice. Our monthly Question, with answers from the readers, (page 426) will continue as long as worth while practical questions and worth while answers are sent in. But now we try a new idea. Let us have your opinion, each month, about some interesting or basic fundamental. It will be the first feautre each issue, and the discussion for the issue to come will be announced a month ahead. Regular contributor payments will be made for this material. Material not immediately used, because of lack of space, will be used later.

**Discussion for January—What is the future of honey marketing?—Changes, methods, products, co-operatives, commercial packing, distribution, education, research. Send your contribution by Dec. 15th.**

# PURE LINE HYBRIDS

By S. T. BERGMANN

THE breeding of better bees seems to be the most important problem in the industry and it is surprising it has not been attacked in earnest before, considering the amount of knowledge available about heredity and breeding.

Comparing the situation in beekeeping with that existing among domestic animals, no similar case in breeding can be used as a guide. If, however, one looks to the plant kingdom, a parallel situation may be found. When different plants are examined, some are so formed, they almost invariably pollinate themselves and so are naturally inbred.

Corn is wind pollinated, the pollen being easily carried a long distance, and, being more likely to be carried away from than to fall on the silks below, any large number of silks are not likely to catch pollen from the same source, so there still would be crossed plants to recross in the next generation.

So, even if only one colony of bees were placed by itself, the drones are sufficiently unrelated to their sisters so if a number of queens were produced, they would still not be closely inbred and in time would work back to a similar state of cross breeding that existed before. Similarly, even if two different breeders are crossed, the drones remaining pure, would in time bring the stock back to similarity of one breed or another and would not result in the formation of a new breed. Thus the bee is naturally protected from changes.

For a great many years, corn seed was selected by the performance of the plant that produced t. The best plant in a field was selected and its seed used next year to produce plants to select from again. By this method, some improvement was made over unselected seed stock. Good strains were developed but, due to the mixed heredity of the corn, as a result of many generations of constant crossing progress was small as compared with what could be done with plants naturally inbred.

The same may be expected in bees. Selecting the best colonies to breed from will give a desirable improvement over a long period. As in corn, bees are of considerably mixed heritage and there will always be unexpected faults coming up even after a long period of selection.

The greatest step forward in corn was developed when it was found that by the closest possible inbreeding, the mixed heredity could be much narrowed down, and undesirable factors eliminated. When this was accomplished, the remaining desirable factors could then be reunited by crossing, and at the same time added vigor was given to the plants in the first generations of the cross, which are known as pure line hybrids. By trying various combinations, hybrids were produced that were hardy, disease resistant, high yielding, and possessing other desired qualities, the most remarkable one being uniformity. Hybrids have been developed that are much superior to good seed strains developed by straight selection.

It is reasonable to expect the same results may be obtained with bees in the same way. The first step is to inbreed different races to get strains with desired qualities singled out by elimination of the things which are not desired. Some system must be developed to insure the closest possible inbreeding and the closest that can be used to compare with self pollination of the corn is brother and sister matings.

It is proposed to bring this about as follows: First, produce a number of queens from a selected breeding queen, and permit these queens to mate at random. Then select one of them to produce drones for a mating yard. When these drones are available produce a large number of queens from the original selected breeding queen and mate them with the drones that have been produced. From among these queens, select the one having the most desirable qualities, using whatever method of determination that conditions and ingenuity suggest. The greatest variation may be expected to occur in the second generation. Selection and continued inbreeding will have to be kept up until all variation has stopped and the strain breeds true when intermated within itself.

For the selection of some factors, the queen may be judged as soon as she has produced bees, as in the case of color. For color, several generations can be produced in one year and instrumental insemination may be used to great advantage. Other selection may require progeny testing, and only one generation may be obtained in two years.

The deterioration brought about by close inbreeding is not in fact quite that, but is the combination of undesirable factors that are usually hidden by crossing, but which may now be seen and eliminated by selecting that stock which does not show these factors. There is, however, some loss of vigor which is again restored by crossing.

Another example of this sort of breeding for improvement has been reported with haffix. Black hull, which produced 42 bushel of seed per acre, was crossed with Hegari, which produced 80 bushels per acre, and the resulting hybrid produced 147 bushel. There is no reason why a similar effect could not be obtained with bees. The greater the difference in parents, the greater the increase in vigor may be expected to be. For this reason, it would be seen that to produce the pure strains as this

(Please turn to page 416)

# HOW TO DO IT

## QUICK REQUEENING

Just how successful this plan might be when used continuously I do not know as I have only used it in an emergency. After thoroughly manipulating the colony, killing the old queen and putting the colony together again, and the bees reasonably smoked, I would let the new queen loose on top of a brood comb. I have only tried this a few times, but with no loss. This must be done when there is no robbing.

H. S. Leitner,
South Carolina.

—V—

## SMALL AMOUNTS OF WAX

When you have a small amount of wax to render and no wax press, cut the bottom out of an old sixty pound can. Wrap one turn of baling wire around the sixty about a third down from the open end. Twist it up tight with pliers. Insert one by one's about a half of the length of the can pressing in on all four sides of the can. Push down level with the sides of the can.

Take a piece of window screen 24x24 and push it down into the sixty for a strainer. Bend the ends of the screen down over the sides of the can. Melt the wax in water in an open tub. Strain the wax, water and slumgum through the window screen in the sixty. Shake and jiggle it like grandma used to shake flour. If you shake enough you will be surprised how little wax is left in the slumgum. The next morning when the wax is cold remove the one by one pieces from the side to release the pressure. Pour out the water and turn the can upside down and lift the can off the wax by the handles. Pressure on the sides of the one by one's, of course, makes the wax come out easily.

Henry R. Seys,
New Mexico.

## HOW I REDUCE THE DRONES

First, by keeping the drone combs out of the hive as much as you can. Second, by keeping pheasants nearby.

I have never had any cause to suspect pheasants of catching worker bees, or even virgins. It may occur sometimes but I suspect a few stings would satisfy their appetite. As I drive near my yard the pheasants and their young scamper from the outside fields but often become tame enough, but not quite, to be caught. Even the young learn to stay away from your worker bees.

J. H. Sturdevant.

—V—

## REQUEENING

Kill the old queen. Smear the new queen with the mashed body of the old one. Turn her loose at once on the comb from which the old one was removed. I did this a few years ago with nearly a 100 per cent success. I received six queens in the mail, took them to an outyard where I could not return for some time and used this method. All queens were accepted. If anyone else has used this let us know what their success was.

Virgil Sires,
Washington.

—V—

## USING ACID

In the hands of a careful operator, the carbolic acid screen is fine for honey removal. Tack a cloth to the wooden rim of an all wire excluder, stretching it taut. Use chemically pure acid, not over two ounces for the ten-frame size. Attach a string at the center of the cloth. By pumping the string up and down, it acts as a bellows and it works well even in cool weather. Keep the wire side of the screen down and work carefully.

Harry T. Starnes,
Indiana.

—V—

## TO KEEP BEES FROM DROWNING

To keep bees from drowning in the water trough, put small pieces of wood, like wood shingles, into the trough. Then if the bees fall into the water they can climb on the wood and get away.

Eugene Forray,
Indiana.

—V—

## FASTENING FOUNDATION IN SHALLOW FRAMES

Use a straight piece of number 11 wire; place sheet of foundation in the topbar groove, then press the wire into the groove with the hive tool or screw driver. When the wire is removed it leaves the groove clean

again. The wire may be cleaned by heating and wiping with a cloth.

Harry T. Starnes,
Indiana.

—V—

### SMOKER FUEL

The leaves which fall from cedar trees in the autumn make an excellent fuel for the smoker. They give a white, cool smoke which is not irritating to the bees and they will keep fire for considerable time.

E. S. Harris,
Ontario.

—V—

### STRAW FOR WINTER

We use straw for packing, placing baled straw around the hive in strips and holding with wire netting.

Eugene Forray,
Indiana.

—V—

### OIL CAN FOR FEED

An oil can, with a force pump on it, is handy to force feed into combs as the feed can be pumped in with little danger of spilling.

E. S. Harris,
Ontario.

—V—

### SEALING TAPE FOR SUPERS

To prevent bees from robbing wet, empty supers when being cleaned out over colonies, run a piece of paper sealing tape around the joints between the supers. I cut the necessary number of pieces and carry water with me. It is no chore at all to dip the tape and pull it around the joint immediately when the super is put on. This procedure is not necessary when the supers are being dried during a honeyflow.

Herbert McKusick,
Arizona.

—V—

### MICE IN YARD

Cut the top out of tin cans; stamp on one side until it bends to within a half inch of the other side; put poison bait in these cans and place about the yard. The hump will prevent moisture from getting in and spoiling the bait and birds or chickens can not get at it.

E. M. Cole,
Iowa.

—V—

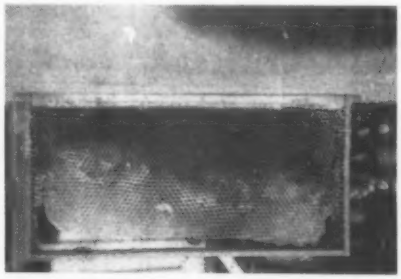
### SMOKER FUEL

Take the cotton wool out of an old mattress. After being ignited, this will smoulder and smoke and it is cool.

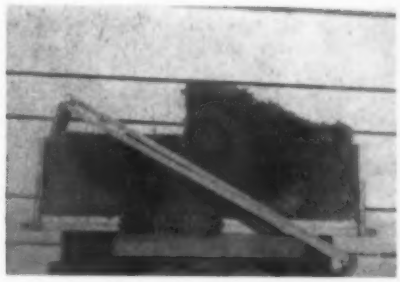
Douglas Decker,
Washington.

# ANOTHER METHOD OF REPAIRING OLD COMBS

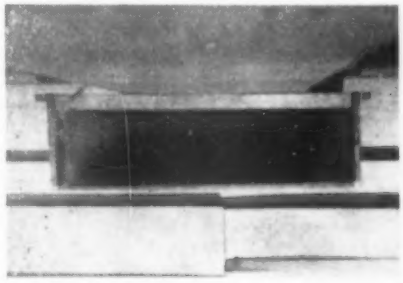
By DAVID SCHOLES



This comb has too much drone along bottom bar, and is discarded.



Comb half repaired, showing sections cut by wires, and edge pinched to fit in slotted bottom bar.



Completed cut-down comb.

WHEN the bottom parts of old combs have been chewed away by the bees, and either left that way or filled with drone comb as shown in the photos, the comb may be restored to service by cutting it down to the next smaller size. That is, a standard deep comb may become a shallow super comb, and a Dadant or Jumbo a standard deep one.

The operation is best done when the comb is warm and pliable. First, saw off the lower portion of the end-bars to leave them the correct depth for the super or hive-body in which they are to be used, but less the thickness of the bottom bar. Now with a sharp knife and a straightedge cut down to but not through the midrib along a line joining the cut ends of the end-bars (if split bottom bars are used allow the thickness of the bottom-bar extra). The next three operations are the ones which require the comb to be warm.

Pull the ends of the wires protruding through the bottom edge of the comb towards the top-bar until they are clear as far as the cut through the comb, thus cutting the midrib. The sections of comb made are easily broken off without damaging the rest of the comb. Next, cut off the ends of the wires level with the comb edge. If you have split bottom-bars the next operation is to pinch along the edge of the comb the depth of the bottom-bar and about one-eighth inch thick. Now all that remains is to replace the bottom-bar. I find that the best way to remove the bottom-bar from the cut ends is to place a foot on the bar and to pull up the ends slowly and steadily, leaving the nails in the bottom-bar. If too rusty the nails can be replaced with new ones.

The result will be a comb drawn full-depth right to the bottom bar and usable right away. I don't find it a good idea to repair combs which will leave drone comb or a gap along the bottom-bar, because the bees don't like to put honey in drone comb. They will leave it to the last, filling the worker-comb surrounding it first. The queen will, and nearly always does, find the empty drone cells and lays in them, and they will be found filled with drone brood when extracting time comes at the termination of the first crop.

British Columbia.

—V—

# NEVADA DISEASE REPORT

The apiary inspection in Nevada is under a State Apiary Commission under the Governor and inspection is done by G. G. Schweis, Chief Inspector.

Report for period of July 1, 1942 to June 30, 1944 shows a total of 21,544 colonies inspected with 106 found diseased or about one-half of one per cent. Funds for inspection are provided by 15 cents per colony tax on all colonies within the state.

# TO GET SELECT QUEENS

By BEN HILLER

HERE is a method I use which is suitable for the small beekeeper to secure first class queens.

In the spring, mark colonies that were your best honey producers the year before. From this lot, pick out an outstanding queen as a breeder. Then choose a colony as a cell builder. Those that use considerable burr and brace comb are often very good for cell building.

When there is a good honeyflow and plenty of drones available, remove all the brood from the cell builder, shake all the bees in a single hive body, leaving two combs of honey and two combs with abundant pollen, and then three combs, entirely empty, or a total of seven combs, and cage the queen. On top, use a special super of ¼ inch thick boards and about 4 inches high, entirely empty. On this, use a lid with a large hole for a gallon honey can punched for feeding. Feed the colony three or four days before you give it any material for queen rearing. An empty body around the can will protect it from robbers and the hive lid keeps it covered.

About two days before I wish to start the queen cells, I put one freshly drawn comb in the hive in which I wish to rear queens, even if it is necessary to take away brood to force the queen to lay in this new comb. As soon as there are plenty of eggs and small hatched larvae, I remove the caged queen from the cell builder in the morning and about noon I take the new comb of freshly laid eggs and larvae from the breeder and lay it flat on inch pieces that are placed over the top bars of the cell builder. I always get the most cells this way. Since I use the special thin super, the end bars fit down flat which they would not do in a super of ordinary thickness. Give plenty of food to the colony at all times. The bees do their own selecting, and they know better than man which cells will make the best queens. They do not try to make a queen out of every cell, but will only pick certain ones.

I have used the grafting method with fair results, but I feel that queens secured in the way I have described are superior and last longer, with less supersedure.

Leave this comb in the cell builder two or three days and then you can proceed just as you would with the grafting method. Prepare cell bars with wax cups, fresh and clean covered with a cloth wet in lukewarm water to prevent the cells from drying out. Take your comb from the cell builder. You can plainly see every cell to which the bees have been giving royal jelly, since the larvae will be lying in a heavy bed of jelly and are easy to transfer into the cell cups with a little care without injury to the larvae. You can use a piece of tinned annealed copper wire formed like a spoon for transferring. Anyone can do it, for this bed of jelly is so thick, you can get under the larva without even getting close to it.

Now we have the larvae in the cups on the cell bar and we take off the thin super, which has been used so far and put the cell bars into the cell builder, and the comb from which the graft is made is returned to its own colony. Now, with the cell bars in and with no brood to care for except the queens in their beds of jelly, they do not go hungry, since there are many nurse bees and plenty of feed with a gallon can of syrup. The bees will take care of the queens and if everything is right, they will build beautiful cells. We have obtained from twenty to twenty-five cells a bar in this way.

When the virgins are ready to mate, you can do something about that too. Close down the colonies with drones you do not want your queens to mate with. I have done this without bad results. There are a lot of bee trees in the woods and sometimes it is hard to get young queens mated purely. That is the problem.

However, I have raised a good many queens this way every year and find them to be fine layers and heavy producers.

———

Indiana.

—v—

## PURE LINE HYBRIDS

(Continued from page 413)

more than one breed should be used will give a wider choice in crossing.

For a breeder attempting to produce better bees, this method would be considerably more expensive since a greater number of inferior queens would have to be tested and rejected than in the case of any method of selecting the best to carry on each year, but it would give far greater results.

Probably the best way to attack the problem would be for each of a number of breeders to work together to develop a strain and then when the time comes, to exchange queens to test the result of crosses. No advantage is seen in a southern location for the purpose of developing such strains, as the testing is the most important factor, and, midsummer, when conditions are most favorable, is the most satisfactory time for requeening.

It is easier to keep mating yards free from other bees here in the North where there are no wild bees to contend with. However, once the material has been developed, there is no reason why the hybrids could not be produced to advantage commercially in the South, and the breeders would have the advantage that their produce would be a specialty, and the honey producer would have to look to them for all their queens. Granting that the pure line hybrids are much superior, this would be to the mutual benefit of all the industry.

———

Saskatchewan.

—v—

## BEES IN AN UNUSUAL PLACE

Henry C. Gouldin, principal of the Washington Irving School, 650 Madison Street, Syracuse, New York, has thirteen colonies of honebees on the roof of the school building. The hives are carefully protected in winter with tar papear and are safe in sheltered spots. The boys in the vocational class built a beehive. That was the starting point. During the summer, the bees are all on the roof, with the exception of one colony in the class room in a cage of screening, with an opening through a window. The pupils have access to this room and many noses are pressed against the sreen and many pairs of eyes watch them.

Mr. Goulin feels that his work as a beekeeper is past the experimental stage, as he has been at it for nearly eight years.

M. Casler Stevens,
New York.

—v—

## KNOWS HIS NUTRITION

Recruit (discoverng wasp in his soup): "Hey, what's this?"

Mess Orderly: "Quit squawkin'—that's our Vitamin Bee!"

From The Ohio Motorist,
Sent in by Kent L. Pellett

—v—

A row of tall straight sentinels (Photo by Alice Coldwell.)

# EUCALYPTUS

## By CARY W. HARTMAN

STRANGE as it may seem, beekeepers for years have allowed eucalyptus honey to be denounced. It has been called all the way from inferior to impossible, without a word of defense from those who produce it, and use it and sell it at the usual price of all honey which others think to be superior. In this article, I do not attempt to give it the defense it deserves, but instead, just give some facts and figures to be considered.

Here in California is the center of eucalyptus production and the territory is large. We have more than 1,000,000 people in this district of which fully 1,000 keep from one to many colonies of bees and produce eucalyptus honey. Many use eucalyptus honey and prefer it to other honey produced in California. A question often asked of beekeepers, "Which is the best honey?" has only one answer, "The kind you like." It is all good. And yet we have been slow to bring out to people generally the virtues of honey. Very few of us are able to see the value of honey as Lloyd George did, former Prime Minister of Great Britain, when he said, "Honey is an appetizing, nourishing, warming and healing food. It is the natural sweet. It contains the vitality that comes from the kindling and energizing rays of the sun."

Our eucalyptus crop for 1943 was in the can at our last meeting in May and everyone seemed anxious to report on the quality and quantity of honey. The first report was from a migratory beekeeper with 300 colonies. He was not quite through extracting, but had eight tons. The second had 75 colonies and two tons. Then a number of smaller beekeepers reported from 60 to 100 pound per colony. One beekeeper reported selling his entire crop of two tons at 15 cents per pound. In twenty-five years I have never had a failure of a crop from this source.

A splendid specimen of eucalyptus bloom.

The eucalyptus district has its center in the Bay area, but commences about 50 miles north of San Francisco and extends all along the Pacific coast to San Diego. Great groves of this plant have been removed to build cities and every year much of it is cut for fire wood. There are many species of eucalyptus in California, the one of greatest importance to beekeepers being the blue gum (E. Globulus) a tall, stately tree, greatly admired for its artistic beauty.

We learned in school back East that "the eucalyptus, unlike the other trees, sheds its bark instead of its leaves." This is misleading for while it may be classed as an everygreen, it is constantly shedding its leaves the year round. The same is true of its bark for it falls all the year, but mostly in the spring when it rolls off covering the ground, thus giving the gardener the privilege of calling it a "dirty" tree. There is another eucalyptus favored by beekeepers; unlike the blue gum, tall and stately, it is shorter and more bushy with lacy leaves. It produces honey in July and August, sometimes in September, helping out the beekeeper who extracted too closely in the early months. Extracting time coming so early means that enough honey should be left on to carry the bees to the next flow, but some beekeepers are careless and so this tree fills a vacant place. Migratory beekeepers may extract closer if they are sure of moving in to a place where they know they will get a flow.

There are few hungry bees among the eucalyptus and I have yet to hear of starvation. I do not write this expecting others to locate in the eucalyptus area. If they do, they will find locations scarce. I just write it in defense of a beekeeping region defamed by the uninformed who do not know the facts. Neither do I make any claim that eucalyptus honey will take the place of orange, sage, star thistle or clover, but I do claim that as long as it is produced, it will have its friends and staunch supporters.

California.

—V—

# UTAH

A cold, wet spring, with a dry July and August cut Utah's honey crop from 1,975,000 pounds in 1943 to 1,456,000 pounds in 1944, according to Edward C. Paxton, agricultural statistician. Although the number of colonies remained at 52,000 both years, the yield dropped from 52 to 38 pounds to the colony.

Glen Perrins, Utah.

# A SECOND INSTANCE OF SHORTAGE OF POLLINATING INSECTS

By DR. E. F. PHILLIPS

THE sparsity of insects for pollination in Germany after the first war was told last month. There is another instance of a shortage of insects for pollination that occurred on a national scale that may serve to support the claims of beekeepers of the need of their bees in this service.

Prior to the first world war and to the Revolution, there was a practice in much of European Russia that was communistic in nature, perhaps even more definitely communistic than some of the later Soviet plans. Under the **mir** system, the male citizens of a village met at least once in three years and divided all available agricultural lands equally among themselves. Each able-bodied man received his share of each soil type, and that sometimes resulted in each man having a number of small tracts that were often some distance apart. After the divisions, it was desirable that the tracts be marked off, and since trees and lumber are scarce in the steppes and black earth country, they did not build fences but erected earthen barriers.

In a short time these barriers grew up in brambles and weeds, and they then served as nesting and hibernating places for hundreds of species of wild beneficial insects. Under such conditions there was no problem of supplying insects for pollination of those agricultural crops requiring this service. Probably the peasants knew little or nothing about the services performed by insects, and did not realize that the methods used worked to a desirable end.

During the period of the First Five Year Plan, small individual farms were largely abolished and huge collective farms were established. Those farmers who had been moderately prosperous were "liquidated," which is a polite name for eradication. In these collective farms enormous fields were planted to a single crop, and that required that the former barriers be eliminated. This destroyed the nesting and hibernating places for the beneficial insects, with the natural and rapid result that a deficiency of such insects occurred. It was noted that sometimes on the edge of the large fields seed was set, but not in the center.

The situation developed into a crisis, and some of the best investigators of the Soviet Union were put to work on the problem. They made counts of bumble bees all over European Russia, probably as accurate a census of an insect species as has ever been made. It was recognized that there is not much that can be done to propagate beneficial insects that build their own nests, and of all the insect aids to pollination the honeybee is the only one under the control of man. The choice was either to revert to the small fields with earthen separations or to provide pollinating insects some other way. It was obvious that the Soviet government would be unwilling to abandon collective farms, so the problem must be met through providing enough honeybees.

The number of honeybee colonies was at first entirely inadequate for the supplying of enough pollinating insects, and the best estimate that could be made indicated a need for an increase in colonies from about five to forty million, all this to be accomplished in a period of five years. It was in connection with this need that I was invited to visit the Soviet Union in 1932.

Any good beekeeper could increase one colony to eight in five years under average crop conditions, but it is less simple to make the increase needed for an entire country. The problem called for the manufacture of thirty-five million covers and bottoms and 105 million hive bodies, and that is big business. There would also be required thousands of additional beekeepers adequately skilled to manage large holdings of colonies. There would be the problems of transporting colonies form the places where the increase was made to their permanent locations. There would be accessory needs such as smokers, queen excluders and no end of items. During the period of increase the honey crop would be reduced, but after the increase was completed, there would be need for marketing plans for a vastly increased honey crop. Beeswax would be in demand for comb foundation during period of increase, and afterward there would probably be need for some way to market an increased production, especially since at that time the Church was in retreat and could use few candles. There would be accessory problems such as providing more beekeeping journals, more books on the subject, and so on throughout a vast catagory of things that would be increased or materially modified if the beekeeping industry were given so large an advance. Probably never before in beekeeping history had there been such a problem faced for this undertaking, all this arising from a need for insects to cross pollinate essential agricultural crops

Under a form of government which could shift people from place to place and which could order things about, such a vast development of beekeeping was more feasible than would be true in a democracy. But even where this could be done, it was still necessary for somebody to make some large decisions. There was also the overwhelming problem of rivalry from other industries that needed manpower and materials in huge amounts. The problem of lumber to make bee hives was terrific, at a time when building was essential and other aspects of life were undergoing changes that implied use of such materials. Then if the lumber could be obtained, it was necessary that transportation facilities be available at the right minute. It meant building vast manufacturing plants, after deciding where they should be built. One can allow his imagination to run riot for quite a time in picturing all the changes implied in such a terrific increase in colonies of bees, and the problem was never visualized as a simple one.

Nobody outside of the Soviet Union knows even now in what degree these plans materialized, and I have seen no official or unofficial statements about success or failure of the plans. It is impossible to believe that the plan met with full success, and even if official statements had appeared about it, one might with some propriety fail fully to accept them, because of the political implications in any such reports.

The one important lesson to be learned by people outside the Soviet Union from all of this is that insects capable of carrying pollen from plant to plant are vital to agriculture. If other insects capable of this service are lacking, then recourse must be had in honeybees. This does not at all imply that honeybees answer all the needs as well as they could be met with a diversity of insect species, and as a matter of fact, honeybees are in some instances a weak substitute for some other species, but in this story we have an additional instance of the vital need of honeybees, for some purpose other than honey production.

---

New York.

# WHO'S IT?

A schoolman, once thoroughly inoculated with a proper dose of bee fever, always turns out to be a leader in beekeeping, both in practice and theory. Such was this young man and such is he yet, although older and wiser. He likes to try things and work out improvements so there are few notions that he lacks experience with. He is a pro and con argumentor, identified in some well known disputes, with some equally well known adversaries. He likes to detroy false notions and is quick to jump on them with his pen and his wit. He likes to put his ideas into use before he defends them; well known as a honey producer and a queen breeder, he distinguishes himself as few beekeepers do, with a fluent pen (or should we say typewriter?)

Have we said too much? Doubtful, as this is a toughy. Who is the unknown. Send your answer before the 15th of December. If you answer correctly, your subscription will be extended three month.

* * *

Last month we asked if Who's It should be continued into the new year. So many said "Yes, by all means" that at least it will appear for a time yet, until interest is too little to give it space.

Guy Polley, Missouri, thinks "We are just now getting deeply interested in it and it will take some time yet even to wear off the new." Harry W. Johnson, Iowa, says "We are having too much fun to quit."

"Without the hints," writes Eldon Martin of Missouri, "the feature would not be interesting, but what a kick I get out of trying to outguess the others. Of course, you can't make it too hard, nor too easy, and you have to keep in mind all of your readers and not just a few. I like this game just as it is and don't see how you could change it to make it any more interesting." Willard W. Smith, Illinois, suspects that "this feature has been rather expensive, but I have enjoyed it to the full. My vote is to continue." W. P. Kinard, Mississippi, admits that "it would be putting it mildly to say that this department affords considerable amusement."

On the negative side, P. W. MacNeill, Pennsylvania, "Would not vote for Who's It to continue at the expense of the monthly index. I feel let down without the index. Nevertheless, I enjoy Who's It and do not recall ever having seen anything like it elsewhere." Well, the index should be in each month. But we can't make room for it just by omitting Who's

It, but only by using more paper in the advertising sections,—and Uncle Sam won't let us do that. So we get it in when we can.

* * *

**Last Month—Frank C. Pellett**

Of course, and we almost had to get an extra hand on the mail. Quite a few, including LeStourgeon of the "Item," and Dr. Phillips, of Cornell, considered the camouflage entirely too scanty to overcome their sharp vision. So too says J. F. Garner, Elmore, Minnesota, but Russell Ashton, Berrien Spring, Michigan, tops it "The man hiding behind the brush is none other than Frank C. Pellett, but this test garden must have been unpopular with the bees as his chin has been clean for several years." How you like that, Frank?

V. O. Lee does a pretty good job too, as he vows that "he either needs a rosary or a shave. Those eyes are as keen with the whiskers as without." W. G. Duckwall, Jacksonville, Illinois, figuratively took "this Austrian out and got him a shave

Frank C. Pellett, without the adornment and as he looks today.

and, what do you think, I had our good friend the botanist of your staff." George Vansell, Davis, California also acknowledges that he never saw him with whiskers but the eyes are okay." J. A. Reed, Weaubleau, Missouri, decides "those eyes and that forehead look so much like his that I pronounce it Frank." Guy Polley, too considers it "pretty good, Mr. Pellett, to disguise yourself behind those whiskers but the eyes and head just give you away." Tom Burleson, Waxahachie, Texas, echoes "this fellow behind the screen doesn't look like anyone I have seen before, but the eyes and forehead are those of Frank C. Pellett, so that's my guess."

Van Wyngarden Brothers, Hebron, Indiana claim he looks "like someone in the Gay Nineties." Frank, you can put on a goatee and a mustache but the eyes still look right through you," declares Jasper Knight, Hayneville, Alabama. "An intelligent looking, bearded youngster, and none other than our naturalist and apiarist, Frank Pellett," according to Joseph Garre, Aniwa, Wisconsn.

Kenneth Hawkins, calls him "Grandpa Pellett". Here, here, Ken, he's already got so many grandchildren he is like the old woman in the shoe. And this one you can figure out, from I. L. Bartin, Townville, Pennsylvania, "I've never met Pellett but this looks like him!" J. W. Stine, Fairfield, Iowa, dates the beard pretty close, claiming "the picture was taken during the time he was Inspector for Iowa, or just before then."

"This handsome young man, with the Van Dyke, writes the articles on nectar bearing plants," according to John Boyko, Houlton, Maine. We stuck our neck out, says Eldon Martin, Goodland, Missouri as the "Use of this gentleman, seems such an act of boldness that I fear it may be a trick; yet if it is not Pellett I haven't the slightest notion as to who it might be." Earl E. Manges, Flintstone, Maryland, feels that "those keen eyes and that kindly face cannot be changed by hirsute adornment." The whiskers gather compliments all through, but only B. F. Bell, Kingston Mines, Illinois, congratulates him on the "French foliage." And this from Harry W. Johnson, Sibley, Iowa, caps it "He looked older, when he was younger, than he does now that he is older.'"

* * *

Nevertheless, Pellett will have to apologize to these gentlemen since he looks enough like them to misguide some good subscribers: Neal O. Diemer, Downers Grove, Illinois, thinks it Professor H. D. Hughes, Iowa State College; Harold R. Mickle,

(Please turn to page 427)

# THE EFFECT OF LIGHT ON HONEY GRANULATING SLOWLY

By W. A. STEPHEN
Central Experimental Farm

Fig. 1—Phototropic effect on granules in honeys undisturbed ten months.

THE effect of light on the settling out of various solid phases and ring formation in colloidal substances have been studied by different scientists, but no account has been found of a detailed study of the effect of light on the granulation of honey.

Munro (1923) noticed that a glass jar containing honey standing near a partly open door showed granulation only on the side towards the light, but thought it possible that changes in temperature might have been responsible. Betts (1928) states that beekeepers commonly believe that exposing honey to the alteration of light and darkness hastens granulation, and Gubin (1926) says exposing honey to sunlight favors coarse grained granulation.

Although no project was set up for the study, certain phenomena have been observed in the course of experimental work carried on at the Bee Division, Central Experimental Farm, Ottawa. Over one thousand samples of honey, representing all producing areas in the Dominion and representing a great many types have been under observation. This paper presents evidence supporting the theory that light affects honey granulation and fermentation, as well as a brief review of what may be allied phenomena.

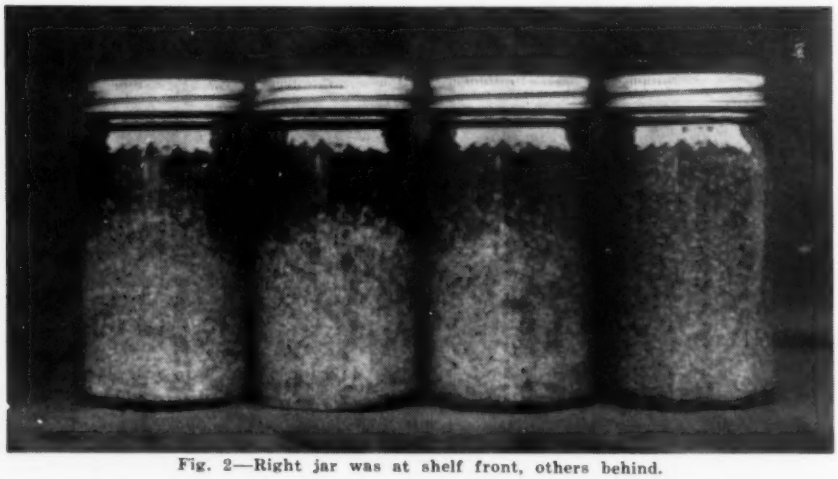


Fig. 2—Right jar was at shelf front, others behind.

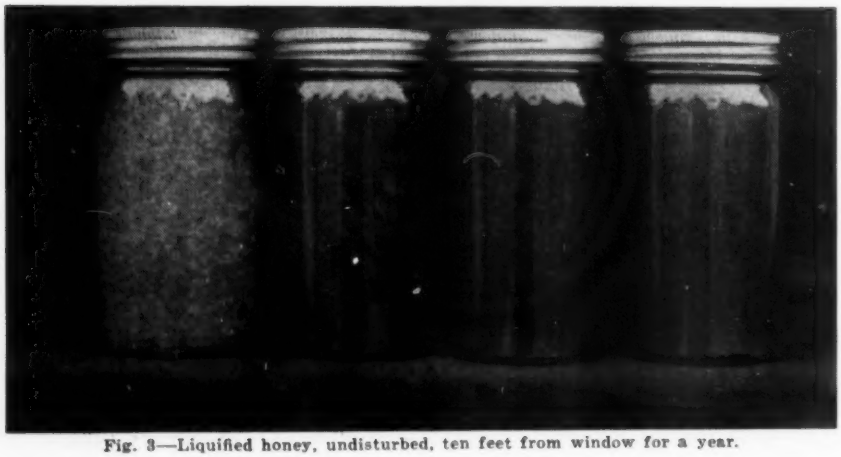


Fig. 3—Liquified honey, undisturbed, ten feet from window for a year.

### Liesgang and Associated Phenomena

Ring formation in gels was first observed by Liesgang, who found that concentric rings separated by apparently clear zones, appeared when a drop of strong silver nitrate was placed on a glass plate covered with a 5 per cent gelatin gel containing a small amount of potassium dichromate. This phenomenon was subsequently the subject of different investigations and Hatschek (1921) discovered a diurnal progress in diffusion when a potassium dichromate solution was poured onto an agar sol containing crystalline lead acetate. This anomaly proved to be caused by light. When screened the specimens developed normal strata throughout, but when exposed to light from a north window the anomalous stratification resulted.

Sen and Dhar (1924) discovered that the Liesgang rings formed slowly in diffused light, while Scott-Blair (1925) found that either intense white light or complete darkness caused irregular ring formation. Morrison (1925) demonstrated that soil suspensions exposed to light settled out in layers, but when the light was cut off the layers disappeared.

### Phenomenal Behavior of Granulating Honeys

Although the majority of Canadian honeys granulated in a month or two after being extracted, some granulate very slowly and others not at all. It is the honeys which granulate very slowly that give rise to anomalities. These form two visible phases, the dextrose crystals settling out to give a solid mass, while the levulose remains in the liquid state.

Occasionally samples settle out with coarser granules at the bottom, becoming finer towards the top of the layer which may occupy the lower quarter of the jar. Coarser granules

Fig. 4—Complete granulation, all jars with gas bubbles, left most prominent.

Fig. 5—Two jars from shelf front, left one turned to show side away from light.

Fig. 6—Honey with two zones of granulation, and undergoing fermentation.

have been observed to settle out above this layer, again followed by finer granules and the whole surmounted by liquid, but it has not been ascertained that the pattern continues indefinitely.

While these samples have been on shelves beside a window and hence, not exposed to direct light, nor always in the same position on the shelves, the effect of direct light on the rate and character of the granulation cannot be affirmed, but Fig. 1 shows the phototropic effect on granules forming in identical honeys which were undisturbed on the same shelf for ten months. The jars are turned so that the sides which were towards the front of the shelf are outwards. There was definite agglomeration of the granules on the sides exposed to the light, while more remote areas contained proportionately fewer granules. Jars of identical honey placed immediately behind those pictured in Fig. 1 contained fewer granules and showed little tendency to accumulate at any particular place. The granules, however, were settling to the bottom under the influence of gravity, which influence is also evident in Fig. 1.

It may be possible that changes in temperature affect the rate and type of granulation of samples of honey where one is at the front of a shelf and the other next the wall, even though the shelves are in a remote part of a room, protected from drafts. Fig. 2 shows four samples of identical honey, the right jar of which was at the front of the shelf with the remaining three in line behind it, surrounded by other jars. Granulation was complete in the jar most exposed to the influence of light; the rest were only one-half to two-thirds granulated. In the jar on the left the granulation was of a different character from that in the jars immediately in front. Here greater differentiation in temperature may have had an influence, but the effect of reflected light from the white wall may have been responsible. The increased amount of granulation in the jar on the right would tend to support the conclusion that light influences granulation. The presence of entrapped gas bubbles in the granulated honey depicts the solid phase in each jar.

The honeys in Fig. 3 were liquefied and remained undisturbed near the center of a table ten feet from an east laboratory window, for about a year. The jar on the left had its flat side towards the light, the remaining two being immediately behind. Since the jar on the right was approximately a foot from the wall, it is hardly possible that difference in temperature could be held responsible for the evident characteristics. The fact that the granules in the jars (left and center) accumulated on the sides of the jars next the light would also be evidence of a phototropic effect.

### Evidence in Fermentation

Granulation was completed in the honey in all jars on Fig. 4 and all the jars contained gas bubbles, but in the one at the left these show up much more than in the remaining jars. Fig. 5. represents two jars which had been standing at the front of a shelf and when photographed were almost identical in appearance. The one on the left has been turned around to show the side which was away from the light.

The question, naturally, follows as to whether the particular evidence indicative of light affecting fermentation is not a result of its previous affect on granulation. That is, since granulation precedes fermentation, are these anomalies of fermentation the direct result of peculiarities in granulation or are they also affected by light?

Fig. 6 shows a sample of honey where the upper part is composed of two distinct zones of granulation. This honey is undergoing fermentation and as the entrapped gas bubbles force aside the adjacent granules a grinding action takes place. Here these particles are becoming dislodged and are settling out through the supernatant liquid in a fine layer on the bottom. This is a reasonably well understood procedure, but the presence of the two upper granulated zones cannot be accounted for so easily. It is suggested that the distinctive layers are the result of the effect of light on granulation and that it shows up particularly when fermentation occurs.

### Discussion of Results

Evidence has been presented on the effect of light on the character of granulation in honey. It would appear that some phenomenon akin to the ring formation reported by Morrison (1925) may occur in honey exposed to indirect light, and honey exposed to the influence of light from

(Please turn to page 425)

# EDITORIAL

## NEW PLANTS FOR USE

OUR present day agriculture is founded upon the use of plants which for the greater part have been under cultivation for from 1000 to 3000 or more years. But little attention has been given to the search for new plants for use. With hundreds of plantsmen engaged in research, they give attention principally to improvement of plants already under cultivation for centuries.

When the white men came to America they ploughed under a rich and varied flora without first investigating to see whether it might be of use.

Thomas Jefferson is quoted as having said: "The greatest service which can be rendered to any country is to add a useful plant to its culture."

The man who resigned his position in the patent office more than a half century ago because all important invention had been completed was no more short sighted than the man who now contends that all our useful plants are already under cultivation. The use of milkweed floss has recently brought this plant, hitherto regarded as a weed, prominently to public attention and gives a hint of what can happen when a careful study is made of our wild plant resources.

Substantial improvement in bee pasture is likely to come as a result of the addition of new plants to our agriculture, especially those which are the source of essential oils.

—v—

## CONVENTION PROGRAMS

TOO often the beekeepers overlook opportunities to secure speakers from other industries to appear on their programs. A baker who addressed a group of beekeepers gave a very interesting discussion of the problems arising from the use of honey in the baking trade. Not only was he able to give them information as to the ways in which honey can be successfully used in the bake shop but he was able to point out the importance of the right kind of honey for a particular purpose.

Honey and beeswax are used in so many ways as to offer a wide field of opportunity if we search out the men who know of their value to others than beekeepers. We need to learn how to meet consumers' needs if we are to continue to sell our products in competition with the many competitors which will be in the market as soon as the war demands are satisfied. The man to whom we sell can often give us much help by telling us why he buys our goods, for what he uses them, and the manner in which they should be packed to serve their proper purpose.

—v—

## THE HONEY CROP

THE last two seasons have brought few reports of the bumper honey crops of former years. Apiary averages of two to three hundred pounds have been rare of late and many beemen are beginning to wonder whether the big yields of the 1930's in the sweet clover region will come again.

It is well to remember that the region in which many of these heavy yields were harvested had been farmed for only a comparatively few years and soils still retained much of their virgin fertility. With the depletion of the soil and reduced acreage of sweet clover we may find smaller crops for a long period. Perhaps the reduction is only temporary and may be due to the change in farm practices.

The fact that average returns the world over are so very much smaller through a long period of years indicates that we have been enjoying unusually favorable yields which were above normal.

—v—

## SAFFLOWER

IN the October 1941, issue of this magazine appears a report of safflower in our honey plant garden. The plant did well in our garden and was visited freely by the bees. The opinion was expressed that safflower will become a major farm crop in some neighborhoods.

Now we learn that safflower has been extensively planted in the Scottsbluff area in Nebraska as well as Alliance. Mills for crushing the seed are already in course of erection or planned for early building at Great Falls, Montana and at Alliance, Nebraska.

As far as we are able to judge from the behavior of the bees in the test garden, safflower is not likely to prove equal as a source of honey where there is an abundance of sweet clover. It should be of considerable importance in localities where there is no competition from other heavy nectar yielding plants.

We will welcome reports from beekeepers in

neighborhoods where the new crop is grown commercially as to the amount of honey secured from that source.

G. H. Vansell reports that samples of nectar taken at the California Experiment Station were richer in sugar by ten or fifteen per cent than similar samples taken from neighboring alfalfa fields. He reports the nectar yield of individual flowers as very heavy.

—v—

## NEW HUBAM BEE PASTURES

THE newest area to attract beekeepers is in the blackland belt of Texas. Cotton growers who have long sought a legume to use in the rotation on root-rot infested land are reported to have found it in Hubam clover. According to Capper's Farmer the use of Hubam has doubled the yield of lint in comparison to continuous cotton. Ellis County is reported as having grown 5000 acres of Hubam last season.

The beekeeper who is located in a cotton growing neighborhood must watch his step to avoid loss of his bees when dust is applied as serious destruction of bees has been reported from many places in the cotton country.

The general use of Hubam in the cotton area may provide bee pasture on a scale once common in the wheat belt of the Dakotas where sweet clover was so extensively grown.

—v—

## SUBSTITUTES FOR STAPLES

AFTER all the centuries that man has depended upon the cow it is a bit surprising to find real competition for dairy products. The writer has been sampling some made from soybean. Soy milk looks so much like natural milk that one would not readily tell the difference from appearance alone. The taste is even better than much of the canned milk on which so many depend. Soy butter looks like cow's butter and to many is a satisfactory substitute. It is very different from the margarines so generally sold.

Ice cream made from soy milk, however, is coarse grained and not likely to arouse enthusiasm on the part of lovers of the cold dairy dish. On the whole the soy bean provides substitutes for dairy products of a quality which offers real threat to the future of that industry.

New developments follow each other with such frequent regularity as to require that producers of any staple be on the alert to avoid loss of markets to new competitors. Manufactured syrups have replaced a large part of the demand for honey once regarded as a staple. To regain his former favorable position the beekeeper must find new uses for his product or convince the consumer that his is a superior product. Research is necessary in either case.

—v—

## POLLEN RESERVES

IT is a bit surprising that beekeepers have been so long in coming to recognize the importance of pollen reserves. Now that we do understand the relation between ample pollen supplies and brood rearing we are faced with the problem of meeting the need.

A few are resorting to pollen traps in order to accumulate a surplus. At best this is an expensive process since the colony that is robbed of its pollen must turn its field force from nectar gathering to pollen gathering to overcome the deficit. However, a supply of pollen at a critical period enables the bees to rear sufficient brood to greatly increase the honey harvest and thus pay big dividends on the extra cost.

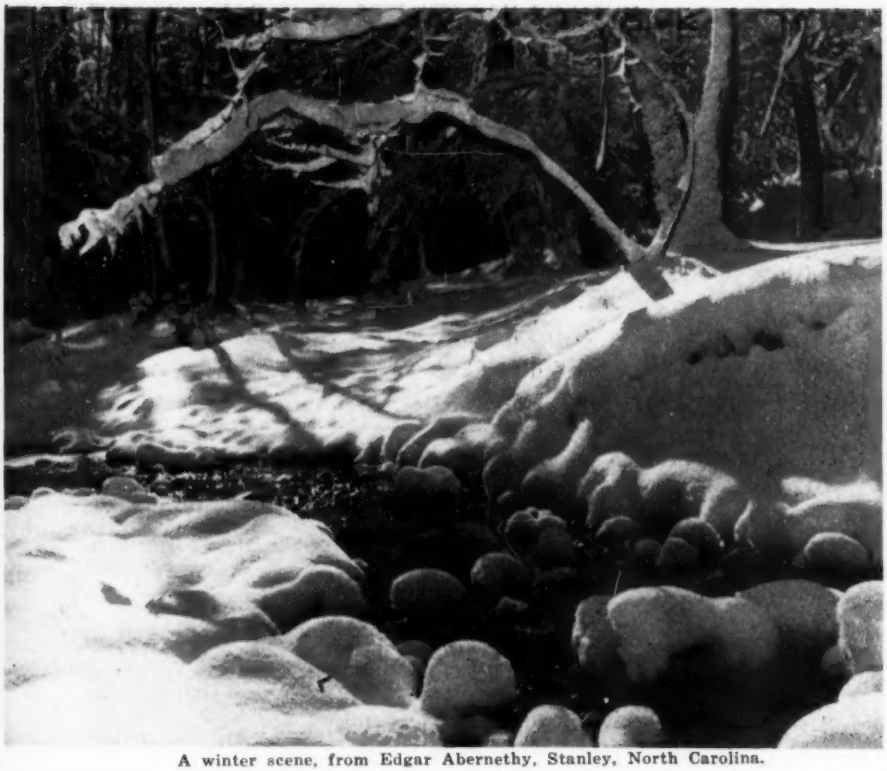
It would seem that serious attention should be given to the possibility of gathering pollen in large quantity from some source which is readily available as is the case in the fields of corn. Much remains to be learned as to the relative value of pollen from different sources. Probably some pollens are greatly to be preferred to others.

Since so many colonies remain unproductive because of the lack of pollen with which to rear brood in time for the harvest, the beekeeper must make some provision to overcome this shortage. Until some better way is found the pollen trap must serve.

—v—

## HONEY IN GLASS

ACCORDING to the Glass Packer, the manufacturers of glass bottles turned out 14 billion glass containers in 1943. A long list of industries pack their products in glass. Although honey is a relatively small user of glass containers in comparison with others, it is estimated that 72 million glass jars were filled with honey in that year. It would be interesting to know what part of the consumers' dollar goes for the container in which it is packed.



A winter scene, from Edgar Abernethy, Stanley, North Carolina.

# ITEMS FROM EVERYWHERE

## BRITISH COLUMBIA

The yield of 482,800 pounds of honey, in Okanagan, Shuswap and Thompson district of British Columbia again led the province for 1944, according to W. H. Turnbull. Not only did this district of which Salmon Arm is a part lead in total honey production, but it was also at the top in the per colony production with an average of 68 pounds. There are 910 apiaries in the area, with a total of 7,100 colonies.

The total 1944 honey production for the province was 1,267,805 pounds, with an average yield of 42.9 pounds per colony. There are 4,601 apiaries reported in the province comprising 29,500 colonies. Figures for other districts are: Vancouver Island and Gulf Islands, 790 apiaries, 122,850 pounds honey, 35 pounds average per colony; Lower Fraser 1,025 apiaries, 256,320 pounds honey, 35 pounds average; upper Fraser, Chilliwack, 491 apiaries, 78,200 pounds honey, 32 pounds average; Kootenays, 430 apiaries, 140,250 pounds honey, 50 pounds average; Central Interior, Prince George, 350 apiaries, 81,600 pounds honey, 48 pounds average; Greater Vancouver, 606 apiaries, 105,785 pounds honey, 35 pounds average.

Although the total yield in the Salmon Arm-Shuswap area was not as large as hoped, it was nevertheless 15 per cent greater than the 1943 production. The percentage yield per colony in the entire district is higher than in other parts of the province because of more uniform field crops such as alfalfa and sweet clover.

F. H. Fullerton,
British Columbia.

—v—

## NEW BULLETIN

Bulletin 254 of the Ohio University Agricultural Extension Service is entitled "Bees". It is a book of instructions for maintaining colonies for honey production and plant pollination. The author is Prof. W. E. Dunham who operates large apiaries as a side line to his teaching. The bulletin contains 32 pages of well arranged information. A surprising amount of instruction is packed into this small space and not only beginners but well informed beekeepers will find it both interesting and helpful. For copies address State University extension Service, Columbus, Ohio.

—v—

## WATER TABLE IN OHIO

The water table in northern Ohio is lower than it has ever been known. It takes years to change this situation and improve the causes that deplete moisture. We should shock our generation into a definite consciousness of the need for good conservation.

First let's quit draining swamps. Let's try to hold the water on the field instead of draining it away as fast as possible. Let's have a return of timber as rapidly as it will grow, especially in gullies, on hillsides and untillable land. Encourage farmers to fence, away from cattle, a part of their poor grazing land, and instead, use it as a natural culture area for saplings. Let's get interested and cooperate with forest nurseries and conservation programs and assist in planting new forest lands to hold the moisture as it comes to us. Let's prevent forest fires. Let's tie this all together in common interest with the use of honeybees and honey as a food.

Wayne C. Ohl,
Ohio.

—v—

## "A CREED FOR LIVING"

The article with this title on page 339, October, is interesting. I like the thought and agree with it, with the exception of, "Let us learn to be content with what we have." I do not agree with that. If we were to remain content with what we have, there would be no advance. If Mr. Langstroth had been content with box hives and fixed frames, we would not have the Langstroth hive and the Hoffman frames. If Hrushka had been satisfied with cutting out comb and pressing out honey, he would not have invented the extractor and honey would not be produced by the carload.

If men had been satisfied with things as they were, we would not have the telephone, the radio, the airplane, the linotype, automobile, electric light, refrigerator, railroad train, etc. If men were to remain content today, we would be static. There would be no further inventions, no advance.

By not being content, man some day will outlaw war, and all races will live in peace. Let us not be content with what we have, but be grateful, and so, worthy to receive greater blessings than those we now enjoy.

B. L. Hugh,
British Columbia.

—v—

## PAN-AMERICAN SOCIETY

There is a movement to bring the Americas closer together in friendship through an exchange of language, the Latin Americans learning English and the North Americans, Spanish. Hundreds of Pan American clubs have been formed in the United States in the high schools, colleges and junior high schools. The adult

public, however, has not had such opportunity although in South America, hemispheric minded newspapers and magazines carry regular lessons in English.

It is not generally known that there are more than three hundred Spanish and English words spelled exactly alike. Simple rules for changing the endings of many English words automatically convert them to Spanish words of like meaning, so the average North American may acquire an extensive smattering of Spanish with little study and effort.

The Pan American Society has prepared a free pamphlet which describes these words, and it is available to all North Americans who wish one. Those who wish the pamphlet on Simplified Spanish, may get one by sending their name and address to the Pan American Society, Box 315, Quito, Ecuador, South America. The pamphlets are prepared by Professor Senor Don Arturo Montesinos M., espe ially for free distribution. Senor Montesinos is Professor of English at the Colegio Militar, Ecuador's "West Point."

—v—

## A BAD REMEDY

Frank H. Cross, of California, sends a newspaper item about David H. Johnson, a beekeeper, who appeared before the Justice pleading guilty to a charge of drunk driving. He told the judge he had been stung by bees and had taken five drinks of whisky to counteract the pain. He was fined $50, but the payment was suspended on condition that Johnson adopt some other treatment for bee stings.

—v—

## STAMINA OF AN ITALIAN WORKER BEE

I picked up an Italian bee that had overshot the hive in the late afternoon of January 11, that I thought was dead, and brought her into my shop as I wanted to study the way she carried pollen, of which she had a capacity load. I was surprised to find she showed signs of life. I took a toothpick and fed her some sugar from the bottom of a coffee cup and it was not long until she showed considerable pickup and after awhile started to fly. I returned her to the hive I supposed she came from and she hustled in. I thought the incident closed only to find her on the alighting board the next day, and took her back to the shop for future study. This time I left her on a blanket near a stove on a bench and when I later looked for her she was noticeable by her absence and I dismissed the whole affair. Now this morning, January 13, I find her again in a wrinkle of the blanket, still alive, and I again gave her some sugar from the bottom of a coffee cup, and believe if the legs were not all out of kilter she would get out and do some work. It's now forty-two hours since I thought she was dead and she is still fighting for life.

J. J. Quigley,
California.

—v—

## COMMENTS ON FINDING THE QUEEN

One of the replies on the question "How do you find the queen bee?" states the young bees often stand around a queen in a circle. This is also a common statement in books and publications on bees. However, it is a curious fact that in my own experience I have never yet found any number of bees, young or old, surrounding the queen exactly in this manner. My experience, of course, has been confined to making inspections at weekly intervals of not more than seventy colonies in summer and over a period of only ten years. Yet on almost every such examination during the working season, I have found the queen to be mostly ignored as she goes about her business. I would hesitate to recommend that a beginner look for a queen by trying to find a group of young bees in a circle.

It may be a local condition. I cannot say that I have any special way to locate the queen. In general I find that my first move is to move the top brood chamber to one side, cover the lower one and look first in the top, then cover the top one and look in the lower, looking first of all for newly layed eggs less than two days old.

—v—

## IDAHO

It was a poor year in Idaho. A few beekeepers did well with small crops and adequate stores for winter, but for the majority, 1944 was one of the poorest honey years in the history of the state, according to Richard C. Ross and Frank L. Merrill, statisticians. Some beekeepers were not able to secure enough honey for winter stores. The backward season, with cold weather, was the reason, besides the fact that alfalfa was cut early and there was little sweet clover. There was only a light nectar flow from plants that did bloom.

The estimated honey production this year is 3,780,000 pounds, about half of the 7,425,000 pounds produced last year. The yield per colony was only 27 pounds against 55 pounds for 1943.

Glen Perrins,
Utah.

## EFFECT OF LIGHT ON HONEY

(Continued from page 421)

an east window shows a definite piling up of the granules on the side of the jar adjacent to the light source. Further evidence of these phenomena is noticeable when fermentation occurs in the honey, but it has not been ascertained that the type of granulation is entirely responsible. Light may influence the characteristics of fermentation as well.

Dyce (1931) says that colloidal particles may act as nuclei for granulation, an opinion supported by the work of Paine and Lothrop (1933). If so, it may be that these colloidal particles, under the influence of light, become more attractive as a nuclei for crystal formation.

Referring again to Fig. 1, the outermost granulated areas are composed of rather coarse flocculent granules, while the adjacent liquid areas are practically free from visible granulation. If the jars which stood behind these could be taken as checks it would appear as if in those illustrated there had been migration of the granules to the side next the light, for, as previously indicated, the granules in the jars more protected from the light were quite uniformly distributed throughout the honey, and there was equally as great volume occupied by the crystals.

While the author has found no evidence of anyone having reported the phenomenon of light affecting granulation and fermentation, it might be supposed that this might be manifest on occasion, and here it has been observed in connection with very slow granulation processes. Much research may be necessary to establish the reason for this phenomenon. This is but another of **les tresors dune goutte de miel.**

**References**


Betts, A. D., 1928. Some Physical Properties of Honey. The Bee World 9:175-176.

Dyce, E. J., 1931. Fermentation and Crystallization of Honey. Cornell U. Ag. Exp. Sta. Bul. 528.

Gubin, A., 1926 Uber Honigkristallisation. (aus der Moskauer Bienenzucht). Archiv. f. Bienenkunde 7:145-149.

Hatschek, E., 1921. Anomalous Liesgang Stratification produced by the Action of Light. Proc. Roy. Soc. London A. 99: 496-502.

Morison, C. G., 1925. The Effect of Light on the Settling of Suspensions. Proc. Roy. Soc. London. 108A:280-284.

Munro, J. A., 1923. Granulation of Honey—Influences of Light and Temperature Differences on Rapidity of Granulation. Gleanings in Bee Cult. 51:104-105.

Paine, H. G. and R. E. Lothrop, 1933. Influences of Colloidal Constituents on the Granulation of Honey. Am. Bee Jour. 73:134-135.

Scott Blair, G. W., 1925. Periodic Precipitation in Dulute Gelatine Gels. Phil Mag. 49:90-96.

Sen, K. C., u. N. R. Dhar. 1924. Das Verhalten von Silberchromat in Gelatine und eine Neue Erklarung fur Liesgang-Ringe. Koll. Zeitschr. 34:270-279.


Ottawa, Canada.

Lace cactus. (Photo by J. Casey, Comfort, Texas.)

# THE ANSWER

*THE QUESTION:*

*How do you deal with a really vicious colony of bees?*

FIRST, I put on heavy underwear, two pairs of socks, tuck my trouser legs inside the second pair, and put on gloves and veil with care. Then I divide the colony in two, both brood and honey. 24 hours later I introduce two new caged, three banded Italian queens, having located and killed the queen of the colony at the time of division. By the time the new queen has been accepted, the bees are at least 50 per cent less vicious and in six weeks, both colonies are normal.

Herbert H. McKusick,
Arizona.

—V—

THE vicious colony is moved to my home yard in the latter part of winter, usually about February or March and placed where they will not be a nuisance to anyone and left undisturbed until dandelion and fruit bloom.

In the middle of the day, when the bees are working vigorously, I quietly move the hive about a hundred feet or more. In its place, I set another hive with a few combs of sealed brood and a queen cell from a desirable strain of bees. In three or four days, most of the cross bees will be in the hive with queen from the ripe cell. Then I open the hive which was moved, find the queen and kill her, and give the bees a young laying queen or I unite them with a nucleus.

About the middle of May, I add sealed brood to both colonies which I take from colonies that are getting too populous. In this way, the vicious bees arrive at the main honey-flow as two strong colonies and the vicious traits will have disappeared.

Another method is to place an excluder on the hive of cross bees. Then in cold weather, set a nucleus of gentle bees over the excluder. The following spring you will find the bees are docile. Be sure there is plenty of feed in the hive above the excluder.

Harry Starnes,
Indiana.

—V—

I make sure that vicious colonies are placed out of reach of children or passers by as it requires time to breed out the vicious character.

I use smoke carefully on opening the colony, sometimes I manage colonies requiring the use of gloves, at least a quarter of a mile away from home. Nevertheless, the important feature of getting rid of viciousness is introduction of a gentle queen. Most bees will, in time, breed out the cross ones.

J. H. Sturdevant,
Nebraska.

ALL you have to do is use tobacco or tobacco stems. A good dense puff of tobacco smoke smells like an old oversized pipe and even I have to get away from it. You can handle the bees then!

James A. Pine,
Indiana.

—V—

MY experience is that vicious bees can tax the ability of the beekeeper, and require special thought and care in handling. Whereas the gentle strains may be handled more leisurely.

I do not handle bees any more than necessary during a dearth or bad weather. Any vicious colony is treated with special care to reduce their viciousness as much as possible. However, the real aim is to requeen them with a desirable, gentle strain. Vicious bees hold up operations and take the pleasure out of beekeeping.

I select mid-day, the hotter the better, and proceed with manipulations aimed at finding the queen in as rapid a manner as possible while doing everything I can to keep down the bees. Once requeened, the situation is conquered.

W. P. Kinard,
Mississippi.

—V—

SOME people handle a vicious colony roughly and rapidly, thinking they will get through quicker. Then they are worse the next time. Vicious colonies should be handled more slowly and the right amount of smoke should be used, and in time. Then I think you will find the colony not quite so vicious.

Often times the colony is cross

## *QUESTION FOR NEXT MONTH*

*How to you make increase without affecting the crop.*

*This is from F. L. Boynton of Leesville, Louisiana.*

*Get the answer in before the 15th of the month. Payment in cash or subscription, as you wish. Make your choice when you send your answer. If you have a good question, send it for answer. As long as your interest continues, we will keep "The Answer" appearing. Lack of space, in our new form for 1945 may make it necessary to use only a single page for answers, but any good answers not used in the current month will be used later.*

because skunks have been digging around it, or because there are two different kinds of bees in it, or the operator himself may have made them vicious.

Paul A. Ballard,
New York.

—V—

IF the colony is in a one story hive, put on a hive body filled with dry combs, since bees do not like to travel up on wet combs; if you want to catch the queen, put an excluder between the two bodies. Some colonies are so mean that it is better to stop at this point to let the colony settle down a little.

Now come up to the hive quietly and pour a good volume of smoke into the entrance; also jar the sides of the hive with a brick or other weight. Keep up the smoking and jarring until the bees fill up on honey and climb to the upper hve body. It is exactly the method the old-time beekeepers used in driving bess. If you have done a good job, you can handle the colony without the least trouble.

If you separate the bodies quickly and lift the excluder, you will usually find the queen on the underside of the excluder. If you haven't used an excluder, hunt in the usual way for the queen. I have had vicious colonies, but never one that wouldn't "listen to reason" if treated in this way.

E. M. Cole,
Iowa.

—V—

I expect a few stings from every colony but if a particular one is aggressive go slower and use a little more smoke. In reasonable weather any colony can be handled without trouble in this way.

Steve Taber,
Florida.

—V—

IF vicious bees must be kept, deal with them while wearing coveralls with a zipper, boots, leather gloves with elastic tops, a good bee veil. Smoke often does little good. However, I requeen every hive from a more gentle strain.

L. W. Bolt,
South Carolina.

—V—

WHAT tends to subdue one colony of vicious bees may not be the most effective with another, so we try to find out what to do in each case. Of course, obviously the thing to do is to requeen but if the colony, in the meantime, is in a much used part of the yard a screen or guard is placed between the entrance and the path.

When opening the hive choose suitable weather and remember that the bees are usually the most quiet at that time of day when the largest number have gone to the field, generally between ten o'clock in the morning and noon. Use smoke frequently but in small quantities. Keep things covered to keep out bees. A thin syrup or flour sprinkled on the alighting board and on the top bars often helps keep the bees occupied. Sprinkling should be done carefully as some bees will fly when it is done but when they begin to clean it they are less aggressive.

When examining the brood chamber the comb nearest the operator is removed and put behind the supers allowing plenty of room in the hive to move the other combs without rolling the bees. Combs are separated and handled with as little jar or sudden motion as possible.

M. J. Rowland,
Ontario.

—V—

I have always thought the majority of stings are the direct fault of the beekeeper rather than the bees. Assuming, however, that the operator thoroughly understands the habits of the bees and knows better than to inspect in poor weather, or under conditions to create robbing, or while he has the odor of gasoline, paint, kerosene, turpentine, etc. about him, and knows better than to yank off the top before giving the guards a light puff of cool smoke, we can then assume that he knows what he is talking about when he says he has a cross colony.

From personal experience both North and South I have handled exceptionally cross colonies. No one wants to tolerate them because their drones will produce viciousness in other colonies through supersedure and the stinging is unnecessary.

There are two things that can be done to remedy the condition. Of course, the first one is to requeen and the second one definitely is to gas them before sundown. I have never had to do this but it is effective.

With a good tight veil and plenty of smoke applied at the right time and the right places, however, I defy any colony to put me out of the yard.

After earnestly trying to find the queen without result there is one simple way to do it. Dismantle the colony, be sure the queen is not on the bottom board, put a body of empty combs on the bottom board with a frame of brood that will cause the bees to cluster there. On top put a queen excluder and on top of this the bees. Put on an acid board (this is the only use I make of acid). After the bees have left and gone down below you will find the queen on the excluder. Then you can requeen.

John Wilbanks,
Florida.

—V—

GET two smokers, a number of chips or small blocks of dry white pine wood, soaked in kerosine for a couple hours, a half plug of tobacco cut up in chunks not too small, plenty of rags and dry paper. Light one smoker with these articles, then approach the hive where the fighters live. Sit down close to it, fill the air with smoke and if they set on you turn the smoke right on them with a good blast. Keep this up for fifteen or twenty minues until the bees leave you alone and they will readily do that after the good, strong tobacco hits them right. Don't bother the front of the hive as many of the bees going in and out are too busy to bother with anything. If the smoke runs out take the other smoker and use it. Soon the bees will be docile. Remember not all of the bees are fighters, only the guards. Let them know you are boss. This is the best way I have found in 75 years and it will win the battle every day.

A. B. Burkholder,
West Virigina.

—V—

BREAK up the viscious colony, distributing the brood to other colonies, a comb here and there, and kill the queen. The other bees soon tone down the habitual stingers.

Kenneth Hawkins,
Wisconsin.

—V—

## OUR COVER PICTURE

We had several pictures from which to choose, all from John Allen, West Lafayette, Indiana, but this was considered the very best. We suspect these two boys are Mr. Allen's grandchildren since they seem to appear in many of his pictures, but the setting is fine for Christmas.

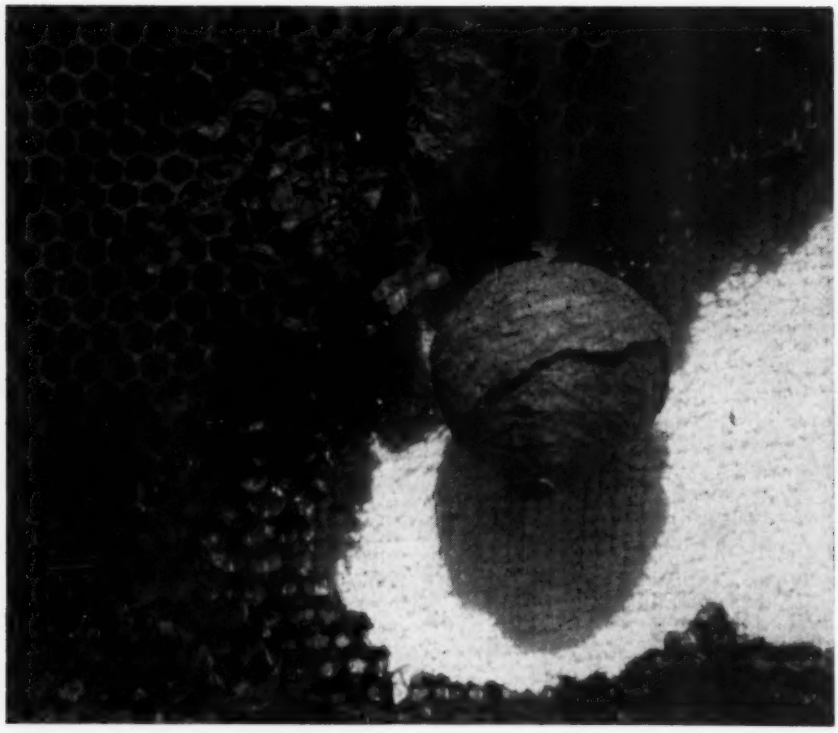
January the cover changes; indeed the entire form of the Journal changes some, and we hope you will like it.

—V—

## WHO'S IT?

(Continued from page 419)

Plain, Wisconsin, honors Dr. E. F. Phillips, Cornell University; Howard E. Black, Adams, Indiana, passes the palm to E. R. Root, and, honor of honors, C. H. Rankin, Michigan, identifies the picture as A. I. Root.



## WHO IS THE MASTER?

Or are both bee and wasp good friends? The nest was in a super while on the hive and, although the super was not fully in use, the wasps came and went by a crack and the bees also performed their tasks with little objection to the presence of intruders. But surely, battle was in the offing.

## TEAM WORK

A triangular block of wood, fastened by string to the belt, can be inserted between supers, allowing the smoker to be used easily, and reducing damage to the bees. The two men can then set the full super off much more quickly and with less effort than one man alone. (Photo by Rev. Pound, Macon, Mo.)

## SHELTER

A good fence for shelter, but poor way to winter. Those colonies should be in two bodies, top one full of honey and pollen reserves. Preferably with a top entrance, as well as a small one at the bottom.

## ANOTHER HONEY BABY

Patrick J. Clark, right in the apiary; photo sent by Mrs. John E. Clark, Sheboygan Falls, Wisconsin, and taken by his father. Age 10 months, weight 32 lbs. Honey in milk formula beginning at age of four weeks.

## ANOTHER GENERATION

A sturdy New Zealander who may escape the great war and lay the foundation for a better industry in his country. M. Grant of Christ Church sends the picture.

## LOOKING AHEAD

Stanley Riedel is now about a ten year old beekeeper in Iowa, as the picture came from Niels A. Nelson, Rolfe, Iowa, about two years ago. More like him and we will always be out front.

## A YOUNG START

According to Grandpa Wesley Collins, Brazil, Indiana, this young fellow is getting a good start for a beekeeper, following granddad's steps. More of us wish we had a toddler or two like it.


## STEP RIGHT IN

Same Wesley Collins (as above) uses this sign which, without words, tells the tourist to step right in and get sweetened. It is not words, but effect, that counts in getting buying action.

# • American Honey Institute •

**Commercial State Bank Building**
**MADISON, (3) WISCONSIN**

**"When peace on earth doth stay,**
**'Tis angels ring the bells—**
**The peasant people say."**

Let us aim to have a honey section in every store in America. Keep this section filled with various size containers of honey. A light might be thrown on the honey. Honey should also be placed with related items, such as, bread, milk, cereals, and fruit. Keep honey on the meat counter also.

— V —

Sno Sheen Cake Flour packages carry the recipe for Regal Honey Icing.

— V —

Two important pieces of research in which honey is included are being carried on at the present time.

Research workers are few these days but when more are available, additional research on honey will be carried on.

— V —

The monthly news bulletin to members in November included a copy of a talk given by Mr. D. E. Kinder, a chemist, at the Southern States Conference.

One idea received from reading the monthly news bulletin of the Institute may be worth far more to the beekeeper than his entire investment in the Institute. If you are not a member invest in the Institute's services today.

— V —

The annual directory of the American Honey Institute will be printed early in January. Each member will receive a copy.

— V —

The Educators Index of Free Material lists leaflets and books of the American Honey Institute.

— V —

Letters from England ask whether their beekeepers may become members of American Honey Institute.

— V —

Honey glazed onions have been featured in colorful advertising during the past month.

— V —

On December 13, the Director has a broadcast on "Holiday Sweets."

A State Health Department writes: "I am grateful for the literature you sent. It is very useful since it is distributed among our various clinics."

— V —

Extract from a letter of a dietitian: "I have been taking dietetics and expect to complete the course in the near future. Also working in health food stores and other places I have learned the value of honey in the diet in place of sugar. Then my father was a physician and dietitian and we as children were taught never at any time to use refined sugar. I can assure you that any information you can send for using honey in cooking will be greatly appreciated."

— V —

One news syndicate gave twenty-four inches of space to an article with recipes on honey during the second week in November.

— V —

Many new members are being added to the Institute's membership list.

— V —

The Institute is preparing for the annual "Honey for Breakfast Week" that begins Easter Sunday morning each year. More than a month ago the Institute notified magazines of this event. This gives one an idea of how far in advance this work must be done.

— V —

There will always be a Christmas. We older folks can live on memories of Christmas and we can make memories for all the little folks.

— V —

## NEW EDITION OF ABC

A new edition of A B C and X Y Z of Bee Culture by Root is off the press. New editions have been appearing with regularity since the first came out in 1877. Probably more copies of this title have been sold than any other book on bees every written.

Much new material is included in this edition and a considerable portion of the old material has been rewritten. E. R. Root remains as the senior author, but numerous special articles are contributed by others who are recognized as specialists in their field.

# • Meetings and Events •

**Dr. M. C. Tanquary**

The passing of Dr. M. C. Tanquary on October 25th removes another of the prominent members of the beekeeping industry. Doctor Tanquary has had an interesting career and has been prominent both as an educator, as professor of apiculture in the University of Minnesota, and as a honey producer at the head of the Tanquary Honey Farms.

The writer first met Tanquary at Manhattan, Kansas, soon after his return from the far north where he went as zoologist with the Crocker Land Arctic Expedition 1913 to 1916. While the expedition was in the north the first world war came on. Before the days of radio communication the expedition was cut off from the rest of the world and had no knowledge that a war was raging. When the relief ship failed to arrive it became necessary for someone to go in search of help. Doctor Tanquary made a trip of a thousand miles over the ice to Greenland to engage another ship to bring out the expidition.

He taught entomology at the Kansas College of Agriculture from 1916 to 1918 and then served for five years as State Entomologist of Texas. In 1924 he established the Tanquary apiaries and devoted the next four years entirely to commercial honey production. In 1918 he became Professor of Apiculture in the University of Minnesota which position he held until his recent death, while at the same time supervising the commercial apiaries that bore his name.

The Tanquary apiaries are among the largest in America and include many thousands of colonies of bees in several states. In addition to several thousand colonies operated for honey production in Manitoba and Minnesota several apiaries are maintained in South Carolina and Mississippi for producing queens and package bees for use in the North.

—V—

**North Dakota, Fargo, December 6—Short Course December 7**

(Room 309, Agricultural Building, North Dakota Agricultural College).

Wednesday, December 16, 9:30 A. M. — Registration. Report of Secretary-Treasurer, Mr. Arvid Benson, Secretary-Treasurer, NDBA. Association Business. Report of Bee Inspection, by J. A. Munro, Entomologist, NDAC. Problems in Honey Production, Mr. Charles Hausmann, President, NDBA. Discussion led by Messrs. Leo A. Bear and Max Cook. What's Ahead for Beekeeping, Prof. F. B. Paddock, State Apiarist, Iowa State College, Ames, Iowa. Questions and Answers.

Dinner at NDAC Cafeteria.

1:30 P. M.—How Plants Secrete Nectar, Dr. E. A. Helgeson, Botany Department, NDAC. Discussion led by Messrs. Ed. Arneson and Art. Osmundson. Bees in Relation to Agriculture, D. H. L. Walster, Dean and Director, NDAC. Sweet Clover Varieties which Prolong the Blossoming Period, Prof. T. E. Stoa, Agronomy Department NDAC. Discussion led by Messrs. Harold Goltz and E. B. McCracken. Labor Saving Devices and Short Cuts in Beekeeping, E. E. Elmquist, E. H. A. Fischer, R. Osmundson and H. A. Schmitt. Highlights of North Dakota Agriculture (illustrated by color movies), Mr. W. P. Sebens, Greater North Dakota Association. Business Session and Election of Officers.

6:15 P. M.—Beekeepers Banquet and Program of Entertainment (To be arranged).

**Beekeepers Short Course**

Thursday, December 7, 9:00 A. M.—Around the Year in Beekeeping, Dr. Munro.

10:00—What's New in Package Bee Management, Professor Paddock.

11:00—The Realm of the Honeybee, USDA movie film. Questions and Answers.

Dinner at NDAC Cafeteria.

1:15 P. M.—Improving Your Strain of Bees, Professor Paddock. The Bacteriology of Beekeeping, Dr. C. I. Nelson, Bacteriology Department NDAC. Promising Developments in Sweet Clover Weevil, Dr. Munro.

—V—

**Important State-Wide Meeting, Nashville, Tennessee, December 8**

Business of utmost importance to the beekeeping industry will be discussed at an all day meeting at the James Robertson Hotel, Nashville, Friday, December 8th, starting at 9 A. M. State Apiarist Geo. H. Rea is anxious to have this a truly representative meeting. Officers and members of the Tennessee Association, sectional and local organizations, and all independent commercial beekeepers are urged to attend. Success or failure of commercial beekeeping in the state may well depend on the decision made and action taken at this meeting. Convention rates at the James Robertson Hotel are $2.00 and $2.50 per day when two persons occupy one room or suite, but reservations must be made on or before December 1.

A. N. Pratt,
Division of Horticulture and Apiaries.

—V—

**Bronx County, New York, Dec. 10th**

The Bronx County Association will hold their regular meeting, Sunday, December 10th, 2:00 P. M., at the home of the secretary, 3016 Bronx Park, East Bronx. We expect to have Dr. E. J. Dyce, of Cornell University, as guest speaker. Bring your bee questions and problems; refreshments will be served. All interested in apiculture are welcome to attend.

Harry Newman,
Secretary.

—V—

**New Rochelle, New York, Dec. 17**

The New Rochelle Association will hold a joint Christmas party and meeting, December 17, Sunday, 2:30 P. M., at the home of Mr. and Mrs. Sylvester Barnes, 325 Webster Ave., New Rochelle, New York. Guest speaker, Dr. W. F. Phillips, Cornell University, "Division of Labor in the Bee Colony." Santa Claus will also be on hand, so junior members are urged to make a special effort to be present. A cordial invitation is also extended to all beekeepers from Westchester County and vicinity.

Agnes M. Barnes,
Assistant Sec'y.

—V—

**Middlesex County (Mass.) Dec. 30th**

The Middlesex County Association will meet Saturday, December 30th, 7 P. M., at 19 Everett Street,

Concord, Massachusetts. The Ladies Auxilliary plan a hot baked bean supper, with brown bread, frankfurters, pickles, comb honey and coffee. Following a discussion of beekeeping problems, Harold R. Stevens, of Weston, will show moving pictures.

A. M. Southwick,
President.

—V—

### Corporal Nels Jensen

N. C. Jensen, Jensen Apiaries, Macon, Mississippi, has received word that his son, Nels, was killed in action, October 20th. He was a radio operator on a transport plane in the India-China wing of the Air Transport Command. He had merited the Air Medal and D. F. C. The transport was a C-47 flying the hump between China and India.

Great loss, that all of us may continue our lives in freedom and that we can make a securer future. Nothing can make Mr. Jensen's world look the same as it was before the loss of Nels, but we hope he will continue to carry on, just as his son would have him do, as the industry needs package men and queen breeders of his skill and character. Our thanks for the gift of your son, Mr. Jensen, and may his presence be with you always.

—V—

### Florida Inspector Passes

Anyone who has known Charles Mack of Sharpes, Florida will have true regret at his death on November 5, He was killed on the highway near his home. Mr. Mack was loved by thousands of beekeepers throughout the South and had served as a Florida inspector for twenty-five years.

The writer well remembers meeting him on his various visits to Florida, particularly one visit at the Tampa fair and subsequently to the Mack home where we were urged to stay as long as possible and sent away with a large gift of citrus fruit.

The passing of such a man leaves a hole in the ranks, not only of Florida beekeepers but of the entire beekeeping industry.

—V—

### Beekeepers' Meetings at Agricultural Conference Week, Purdue University, January 10

9:00 A. M.—12:15 P. M.

Room 101, Agricultural Building

Herbert J. Link, President of Indiana State Beekeepers' Association, presiding.

The Condition of Bees and Apiaries in Indiana—James E. Starkey, State Apiary Inspector, Indianapolis.

Suggestions for the Improvement of Bee Pasturage—B. Elwood Montgomery, Purdue.

Recent Advance in Beekeeping Practices—Dr. James I Hambleton, Director of Federal Bee Culture Laboratories, Washington, D. C.

1:30—4:30 P. M.

Planning for a Permanent Honey Market—C. J. Morrison, South Bend; Jos. J. Schrock, Monroe; Ross B. Scott, Lagrange; Herald L. Hodson, Amboy.

Future Trends and Research in Beekeeping—Dr. James I. Hambleton.

Questions and Answers—(A question box will be available during the sessions and any questions dropped into the box during the day, or submitted directly from the floor at this time, will be answered by the experienced beekeepers and experts present).

—V—

### National Meetings—Jan. 14-16

A committee headed by V. G. Milum, Secretary-Treasurer of the National Federation of the State Beekeeper Associations is completing arrangements for the annual meeting of this and allied organizations including the American Honey Institute, the National Honey Association, the Bees Industries Association, and Apiary Inspectors of America.

Tentative dates selected are January 14 to 16 depending upon the securing of satisfactory hotel accommodations. The convention city has not been definitely selected but will be announced in the January issue along with the complete program of the convention. The latest information is that convention headquarters will be the Morrison Hotel in Chicago.

As soon as available, complete details will be mailed to all officials of state organizations on the Federation mailing list and to all who received the Federation News Letter No. 2. Those wishing advance information as to exact location, dates, and hotel reservations should send requests to Dr. V. G. Milum, 104 Vivarium Building, Champaign, Illinois. Train and hotel reservations should be made early. Hotels everywhere are crowded.

—V—

### Manitoba Short Course—Jan. 15-26

In connection with Farm and Home Week, Manitoba University is holding their twenty-third annual short course January 15 to 26 in which is included a beekeeping course. Prof. A. V. Mitchener, L. T. Floyd, and W. F. McLeod will be the lecturers. Registration is on January 15 with the first lecture at 8:40 A. M.

## Italian Package Bees and Queens

FOR 1945 DELIVERY

2-Lb. package with queen..... $4.00
3-Lb. package with queen..... 5.00

4 percent extra queens with each order. BOOK YOUR ORDER EARLY AND AVOID DISAPPOINTMENT.

**JOHN S. SHACKELFORD**
LIVE OAK, CALIFORNIA

## FOR SALE

BRIGHT YELLOW AND THREE BAND QUEENS

**GRAYDON BROS.**
RT. 2 GREENVILLE, ALA.

BOOK YOUR ORDER NOW FOR

**1945 PACKAGE BEES**
**THREE-BANDED ITALIANS**

From best of stock, honest, dependable service from beekeepers of many years experience. Shipments start April 1, most all shipping dates available. 20% deposit required with order, special discounts on large orders. Untested Italian queens $1.15 each. 2-Lb. packages of bees with queens $3.80 each. 3-Lb. package with queens $5.00 each.

**E. R. RALEY**
710 W. Altamaka Street
FITZGERALD, GEORGIA

## BEE SUPPLIES

**A. H. RUSCH & SON CO.**
REEDSVILLE, WISCONSIN
Manufacturers Jobbers

## HELP WANTED

For producing and shipping package bees starting in January.

State age, height, weight, habits, experience, weekly wages desired.

We pay top wages to active willing workers who will co-operate in a working crew.

**Morley Pettit**
TIFTON, GEORGIA

## ITALIAN BEES AND QUEENS

PRICES TO JUNE 1

| | Queen | 2-Lbs. | 3-Lbs. | 4-Lbs. |
|---|---|---|---|---|
| 1-24 | $1.25 | $4.00 | $5.10 | $6.20 |
| 100-up | 1.05 | 3.50 | 4.50 | 5.50 |
| 25-99 | 1.15 | 3.75 | 4.80 | 5.85 |

Shipping Point Epes, Alabama

**LITTLE BROS.**
SUMTERVILLE, ALABAMA

## PACKAGE BEES FOR 1945, With Queens of Highest Quality. Place Your Order Now

| | | | |
|---|---|---|---|
| 2-Lb. packages with queens, | 1 to 23, $3.85; | 24 to 98, $3.70; | 99 up $3.50 |
| 3-Lb. packages with queens | 1 to 23, $4.85; | 24 to 98, $4.70; | 99 up $4.50 |
| For queenless packages, deduct | 1 to 23, $1.25; | 24 to 98, $1.20; | 99 up $1.15 |

Save us time and delay by ordering your packages in multiples of three. Terms: $1.00 per package with order, balance before shipping date. Live delivery and satisfaction guaranteed.

**JOHN C. HOGG** **Tifton, Georgia**

## BETTER BRED QUEENS — THREE BANDED ITALIANS

Thank you for your orders in 1944. Let us serve you in 1945

**CALVERT APIARIES** **Calvert, Albama**

Although the war has placed obstacles we have managed to fill all our orders with promptness and we plan to continue our reliable service during 1945. *Our prices will appear in this space soon.*

**We are fast filling our schedule for 1945**
**Early bookings advised**

**TWO STRAINS**
**Progeny-Test 3-Banded Italians**
**Various High Quality Resistant Stock**

GARON BEE COMPANY Telephone 8614
Telegrams, Western Union DONALDSONVILLE, LA.

## QUEENS

Daughters of Queens Bred for Resistance, with all PACKAGE BEES FOR 1945 SEASON
**EPHARDT'S HONEY FARMS, PLAUCHEVILLE, LOUISIANA**

## SINCE 1876

**THE NAME (S. T. FISH) HAS BEEN**
IDENTIFIED WITH
THE HONEY BUSINESS

## S. T. FISH & COMPANY

Inc.
**CHICAGO, ILL.**
ALWAYS INTERESTED IN FURTHER BUSINESS—ADVISE US WHAT YOU HAVE IN EXTRACTED HONEY—60 POUND CANS
PHONE MONROE 1910-11

# BUY A SIXTH LOAN WAR BOND


# ...America's Farsighted Beekeepers

IT is especially fitting, we think, this holiday season to acknowledge our deep gratitude to America's progressive Beekeepers.

Our firm conviction is that in this last, difficult season, the splendid cooperation of these Beekeepers set a new high in enlightened teamwork.

They dug deep into their precious hive stocks to help maintain the name and fame of the country's foremost honey brands.

And they did this despite the most tempting inducements "to go it alone" that Beekeepers, as a body, have ever faced.

Because of the wartime shortage of all sweets, the demand for honey by the Beekeeper's home-town neighbors was extremely heavy.

Then, too, because of bad weather, labor shortages, the decline in honey plants, every Beekeeper's crop was woefully below normal.

Thus, had he chosen, the Beekeeper could have sold all his honey locally without regard for the future welfare of the industry as a whole.

But, thanks to the common sense and long vision of many foremost Beekeepers across the land, that was not what happened.

Those Beekeepers appreciated that America's branded honey market is the one, biggest permanent market for honey . . . the one stable market upon which they must count for good sales and good prices in years ahead.

So, wisely, they acted in accordance with this knowledge. They continued to sell their premium quality honey to the reputable Packers whose names appear on this page.

Such loyalty from old-time friends, we are convinced, deserves widespread and sincere recognition.

So to these friends, we are happy to say "Thank you." Your service to the entire honey industry, in these trying times, we are confident, will not go unrewarded.

**SUPERIOR HONEY COMPANY**
Los Angeles, Calif.

**C. W. AEPPLER COMPANY**
Oconomowoc, Wis.

**T. W. BURLESON & SON**
Waxahachie, Texas

**B-Z-B HONEY COMPANY**
Alhambra, California

**H. J. HEINZ COMPANY**
Pittsburgh, Pa.

**THE JOHN G. PATON COMPANY, INC.**
New York City

**THE SIOUX HONEY ASSOCIATION**
Sioux City, Iowa

# CROP AND MARKET REPORT

## Compiled by M. G. DADANT

**We recommend to all beekeepers interested in honey markets that they enroll themselves with the Bureau of Agricultural Economics, Washington, D. C., for copies of semi-monthly honey and beeswax market reports. They are invaluable.**

* * *

For our December Crop and Market column we asked reporters to answer the following questions:

1. Honey plant and moisture conditions.
2. Colony and colony stores condition?
3. How is honey moving?

### Honey Plants and Moisture

Throughout the entire country honey plants seem to be in quite satisfactory condition. While the weather has been extremely dry earlier in the fall it doesn't seem to have extended over a long enough period to affect the honey plants themselves. Later moisture has brought the plants forward quite nicely. In spite of this there is undoubtedly a deficiency of moisture in the subsoil particularly in the northeastern states and conditions are almost even dry in Ohio, Indiana and northern Illinois extending into southern Minnesota.

All in all, however, we might consider the conditions of plants and moisture about normal. In fact, we believe that as far as native plants are concerned conditions are better than the average. There seems to be a resumption of planting of sweet clover and other legumes to a larger extent this fall than formerly but probably the effect of this will not be revealed on the honey crop at least until another crop season.

### Colonies and Stores

Colony conditions on the whole are normal. While there was some difficulty in the early fall the continued warm weather has had the effect of allowing the bees to gather honey and to expedite brood rearing to the point where the colony strength has been built up. New Jersey is one eastern state which reports less than ordinary conditions while in Washington and California we find considerable complaint of spray. The same is true in Utah.

While the late fall has induced brood rearing in sections where there is not a great honey crop it has also induced the consumption of stores with the result that there has had to be quite a large amount of feeding, probably more than ordinarily. We find complaint of inability to get sugar chiefly because it is not in the hands of the distributors rather than that there has been a refusal on the part of the rationing boards. This "light" condition of the colonies is reported quite generally in those areas which are lacking in fall flow.

In the Canadian provinces the weather has been unusually warm up till November 1 and with such weather late has induced a good growth of legumes although conditions were dry early similar to the northern sections of the United States. We believe, however, that conditions are now approaching normal.

### Movements of Honey

Throughout the country the honey is moving satisfactorily. We find no reports of getting less than ceiling prices and no possibility of honey being sold at less than these prices. Demand has quickened on the part of the larger packer.

While amber honey is still meeting with a slow reception in many localities on account of the influence of some of the abominable imported honey which still remains on the shelves, the situation is gradually clearing itself up and amber honey is moving into its usual channels as well as absorbing some of the shortage of white honey on the storekeepers shelves.

We hear report of the gradual movement of the undesirable grades of table honey into bakers' channels thus clearing the way for distribution of more palatable grades. Some report that larger packers are having to dole out their honey in order to make it carry through with a tendency on the part of the beekeepers to pack their own crop and distribute locally wherever possible. There is however, a possiblity that cooperatives and packers are getting a larger proportion of the crop this year than they did in 1943-44.

# • THE MARKET PLACE •

## BEES AND QUEENS

THREE BANDED ITALIAN bees and queens, for spring delivery. Alamance Bee Co., Geo. E. Curtis, Mgr., Graham, N. C.

CAUCASIAN and CARNIOLAN package bees. Spring delivery. Write for price. Tillery Brothers, Greenville, Alabama.

ITALIAN QUEENS ninety cents each, $10.00 per dozen, $75.00 per hundred. Spring delivery. Walter D. Leverette Apiaries, P. O. Box 364, Fort Pierce, Florida.

We are completely sold out of our CAUCASIAN QUEENS and BEES until July first 1945. For their splendid patronage we wish to thank our many friends. REMEMBER . . . order early. T. L. Nicolaysen, Salida, California.

PACKAGE BEES for 1945. Information free. Crenshaw County Apiaries, Rutledge, Alabama.

## HONEY AND BEESWAX WANTED

CLOVER HONEY WANTED—Send sample and price. J. Wolosevich, 6315 South Damen Ave., Chicago, Illinois.

TOP CASH ceiling price paid for your extracted honey. Any amount. Honeymoon Products Co., 39 East Henry St., River Rouge 18, Michigan.

CLOVER HONEY WANTED—Top prices for extracted, section and shallow frame comb. Truckloads or carloads. Tell us if you can deliver. KEDASH BROTHERS, Chillicothe, Ohio.

HONEY AND BEESWAX. HIGHEST PRICES PAID. MAIL SAMPLES, ADVISE QUANTITY. BRYANT AND COOKINHAM, LOS ANGELES, CALIFORNIA.

WAX WANTED—We pay freight charges, and remit the day wax is received, or send C. O. D. Write us for quotations for making your wax into foundation; all work guaranteed. The Hawley Honey Company, Iola, Kansas.

HONEY WANTED—Small or large lots. Send sample and amount. Rocke Apiaries, Eureka, Illinois.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce Street, Los Angeles, California.

CASH FOR YOUR WAX the day received. Write for quotations and shipping tags. Walter T. Kelley Co., Paducah, Kentucky.

ALL GRADES extracted honey wanted. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th Street, Detroit, Michigan.

## HONEY FOR SALE

HONEY FOR SALE—We buy and sell all kinds, any quantity. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York.

EXTRACTED HONEY, 5-lb. glass. A. H. Harris, Route 5, Jackson, Tennessee.

FOR SALE—50 60-lb. tin amber clover $12.00 can; 50 60-lb. tin California eucalyptus, $12.00 can; 50 60-lb. tin California avocado, $12.00 can; 50 60-lb. tin amber goldenrod, $10.80 can; 100 60-lb tin dark Cuban (special) $10.00 can. Natural Foods Institute, 624 Prospect Avenue, Cleveland, Ohio

MICHIGAN'S FINEST WHITE CLOVER HONEY in glass. You will be pleased. Write for prices. John McColl, Tecumseh, Michigan.

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

Rates of advertising in this classified department are eight cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers we require reference of all new advertisers. To save time, please send the name of your bank and other reference with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease or state exact condition, or furnish certificate of inspection from authorized inspectors. Conditions should be stated to insure that buyer is fully informed.

## HONEY WANTED

WANTED—Aster honey. Send sample. Robt. W. Lane, Greeneville, Tennessee.

WANTED—Extracted honey, white or light amber, in 60's. Ed. Heldt, 1004 W. Washington St., Bloomington, Illinois.

## FOR SALE

FOR SALE—American Bee Journal 1912 to 1927, 16 years bound in eight volumes half leather, for price of binding, $20.00. Frank Pellett, Hamilton, Illinois.

FOR SALE OR TRADE for honey—Lewis 10-frame hives, perfect condition, and Dadant's plain foundation. Herbert Reim, Watertown, Wisconsin.

FOR SALE—500 Jumbo supers and combs, 350 5¾ inch supers and combs. All 16x20. A bargain. John N. DeMuth & Son, Corfu, N. Y.

SUPPLIES FOR SALE—Hive bodies, covers and body boards. Shipping cage material. Nuclei hives. O. K. Anderson & Son, Coffee Spring, Alabama.

FOR SALE—About 80 comb honey supers. Michael Carpenter, 205 Normal Road, DeKalb, Illinois.

FOR SALE—New package cages with new feeder cans for cash or will trade for package bees. John Harnack & Son, McGregor, Iowa.

FOR RENT—Bees on shares. Operating 5,000 colonies western Iowa. Will furnish size unit to suit. All good 10 frame equipment. Good locations. You must know the bee business. If not sufficiently experienced will employ on salary while learning. Need several experienced helpers. Old Taylor Honey Co., Harlan, Iowa.

FOR SALE—1, 2 and 3 frame nuclei with queens spring delivery. Also two and three pound packages. Untested queens January, February and March, $1.50 each. Wm. Atchley, 132 Campus Ave., Upland, Calif.

WRITE FOR CATALOGUE. Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

## SUPPLIES

COMB FOUNDATION at money-saving prices. Wax worked at lowest rates. Comb and cappings rendered. Robinson's Wax Works, Mayville, N. Y.

LARGE CASH SAVINGS can be made by letting us work your wax into either wired or plain foundation. Large independent factory manufacturing a complete line of bee supplies including extractors, etc. Selling direct saves you the agent's profit. Quick shipment from large stock. Large free catalogue explains everything. Walter T. Kelley Co., Paducah, Kentucky.

PORTER BEE ESCAPES are fast, reliable, labor savers. R & E. C. Porter, Lewistown, Illinois.

## WANTED

WANTED—Lifetime 8-frame extractor either new or used. State condition and price. Write A. Harrison, P. O. Box 602, Los Banos, California.

WANTED FOR CASH, located in eastern North Dakota or Western Minnesota—100 good used 10 frame metal tops, 200 good used 10 frame bodies. Write net price in first letter. H. A. Schmitt, Box 449, Mandan, North Dakota.

FOR SALE—Sainfoin seed 1944 crop grown without irrigation. 75c per pound up to 10 lbs. 55c per pound in lots over 10 pounds. R. W. Brimhall, Pleasant Grove, Utah.

## SEEDS

SEEDS of honey plants—Anise hyssop, Birdsfoot trefoil, Cleome serrulata and others. Six packet collection $1.00, fifteen packets $2.00 postpaid. Also quantity prices. Send for circular. Melvin Pellett, Atlantic, Iowa.

SEED of Rock Mountain bee plant, 25 cents per packet, five packets $1.00 postpaid. Glen Morgan, 918 Prescott Ave., Canon City, Colorado.

## POSITIONS AND HELP WANTED

WANTED—Beeman experienced in honey production. Steady employment. Salary or share basis.
The Hallman Farms, Blackshear, Ga.

HELP WANTED—Experienced beemen for 1945 in our southern package and queen units. Also in our northern units. Write wages expected for year around job. Must be sober. Tanquary Honey Farms, Inc., Lena, South Carolina.

WANTED—Man with some queen rearing experience, desiring more knowledge of commercial operation. Seasonal man preferred. John C. Hogg, Tifton, Georgia.

HELP WANTED — Experienced or unexperienced, winter work in California, summer in Middle West, with large progressive producer. Woodrow Miller, Colton, California.

EXPERIENCED package and queen men. Good salaries to good men Discharged or disabled service men interested in bees or wood-working, we may have a place for you. Jensen's Apiaries, Macon, Mississippi.

HELP WANTED—Married or sngle man in large bee business. Year around and permanent job for good help. Top wages above what others are paying, for experienced help, and most assured deferment from draft. Write your experience. M. E. Ballard, Roxbury, N. Y.

## TRAPPERS

TRAP FOX AND COYOTE, on bare ground or deep snow. Learn modern tricks to outwit the sly furbearers. Free illustrated circular. Q. Bunch, Welch, Minnesota.

## COLONIES FOR SALE

325 COLONIES, 2-story, 10-frame. Plenty equipment. 40'x45' honey house with apartment latest refrigerator, gas, water, furniture. 50 frame extractor, 3 tanks capacity 4 tons. Boiler, wax press, capping melter. Tilting saw, table, jointer. All fine condition. Located Belle Center, Ohio. See, appreciate. $6000.00 cash. Strickler Bros. Route 2, Pascagoula, Mississippi.

75 to 100 COLONIES with honey, good shape, all equipment honey. G. J. Eller, Rt. 2, Milledgeville, Illinois.

FOR SALE—1000 colonies bees in good clean condition. Well painted 2-story hives. Heavy with honey. Price $10.00 per colony. J. E. Wadleigh, La Junta, Colorado.

Because of illness I have for sale eighty colonies of bees with this year supers stil. on. E. A. Morris, Box 50, Brookfield, Mo.

500 to 700 eight frame colonies of bees. Factory made equipment includes 4 shallow extracting supers, combs all wired and as nearly perfect as can be. Plenty of winter stores. All headed by our famous Polhemus queens. Present locations can be had. These bees average $15.00 per colony income for the season. If interested in a good package bee and honey business write T. W. Burleson, Waxahachie, Texas.

2,000 single story colonies with young queens, ready for flow in Midwest, to be shipped May first, $10.00 each. Reasonable discount in large lots. Will take honey or wax in exchange. Wm. Atchley, 132 Campus Ave., Upland, California.

## MISCELLANEOUS

GET your drawings and construction detail NOW for proven tried BRADSHAW DEMOUNTABLE UNCAPPING PRESS. No more headaches, simple to build your self. Won't rust out, last lifetime. Producers report it greatest improvement in fifty years. No heat required, will not darken honey. Adaptable any size outfit. Send $2.00 today for PLANS to Bradshaw & Sons, Wendell, Idaho.

RANCH MAGAZINE—Do you find it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any magazine published. Subscription $1.50. Hotel Cactus, San Angelo, Texas.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. contains breezy entertaining beekeeping comment each month. One year, $1.00; two years, $1.50. Sample, 3c stamp.
Beekepers Item, San Antonio, Texas.

MICHIGAN BEEKEEPER magazine is Brief, Breezy, Beneficial. You'll like this monthly publication. Subscription $1 a year. Michigan Beekeeper, Rt. 3, Lansing, Michigan.

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents, stamps. Membership of the Club, including subscription to the paper 10/6. The Apis Club, The Way's End, Foxton Royston, Herts, England.

OLD BEE BOOKS—As a service to our subscribers we handle old out of print bee books. Send for interesting list at moderate prices. American Bee Journal, Hamilton, Illinois.

## LIVESTOCK

AMERICA'S LEADING LIVESTOCK JOURNAL. Send $1.00 year's subscription. Three years for $2.00. FREE Magnetic Breeding Calculator with each subscription. Breeder's Gazette, Box AJ-1, Spencer, Ind.

## PASTURE OF SWEET CLOVER PRODUCES 40% MORE FEED

"Our 70 acres of bluegrass pasture is producing 40 per cent more feed since we limed and reseeded to sweet clover," reports John Bumgarner, Putman Co., Illinois.

Four years age he limed, disked and reseeded his permanent pasture to sweet clover. It was just an ordinary pasture then, requiring about three acres to support one cow for a season. Now one cow does well on two acres for a season.

"The important of my bluegrass pasture has paid as well as an equal amount spent on cropland," he reports. Bluegrass pastures cannot be shipped to market, but the products of pasture in the form of milk and meat may definitely contribute more to the bank account than crops from an equal area of cropland. Improved pastures such as this have much to offer to the total farm income by increased forage, less weed growth, more milk and beef, and control of insect growth.

—Prairie Farmer,
By Fred H. May,
Illinois.

# INDEX

## ILLUSTRATIONS

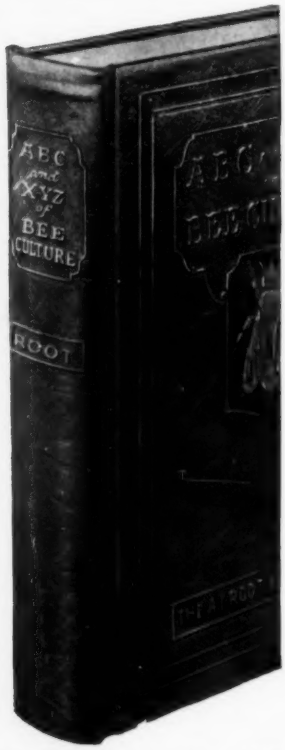
## CONTRIBUTORS

# 1945 EDITION

## *A Literary Triumph in Beekeeping Editing*

E. R. Root, noted international authority on bees, was honored by the Ohio State University bestowing upon him the Degree of Doctor of Law for his great contributions on the value of the bee in the production of food. This singular recognition came just as he was finishing the gigantic task of revising this book which is indeed a masterpiece. It has taken Mr. Root nearly three years filled with days of long hours of reading, condensing and revising to complete this new edition.

*Many new scientific articles* that have come from research laboratories are included in a condensed form.




All subject matter alphabetically arranged.

•

Bound in beautiful fabrikoid
720 pages—700 illustrations

**$2.75**

Postpaid

## Outstanding Authorities

Have been consulted and quoted in order that this new edition can be the most complete book on bees ever published.

Dr. E. F. Phillips, Professor of Apiculture, Cornell University, Ithaca, New York.
James I. Hambleton, in charge of Bee Culture Laboratory for U. S. Department of Agriculture.
H. J. Clay, Food Distribution Adm., Washington, D. C.
Dr. Warren Whitcomb, Bee Culture Laboratory, Baton Rouge, La.
Dr. E. Oertel, Bee Culture Laboratory, Baton Rouge, La.
Dr. C. L. Farrar, Madison, Wisconsin.
Dr. H. F. Wilson, Wisconsin University, Madison.
Dr. Mykola H. Haydak, Minnesota Experiment Station.
Dr. M. C. Tanquary, Minnesota University, St. Paul.
Prof. F. B. Paddock, Iowa State College, Ames.
Dr. W. E. Dunham, Ohio State University, Columbus.
Dr. O. W. Park, Iowa Agricultural Experiment Station.
Dr. A. G. Lockhead, Ottawa, Canada.
Dr. J. E. Eckert, Davis California.

**—And many other authorities have been called upon for information.**

•

ABC & XYZ OF BEE CULTURE—Postpaid (Size 6x9 Inches). **$2.75**

ABC & XYZ OF BEE CULTURE—And 2 Year subscription to GLEANINGS IN BEE CULTURE (Including Canada) (Foreign $4.25). **$3.75**

AVAILABLE NOVEMBER 1, 1944

•

# THE A. I. ROOT CO.
## MEDINA, OHIO